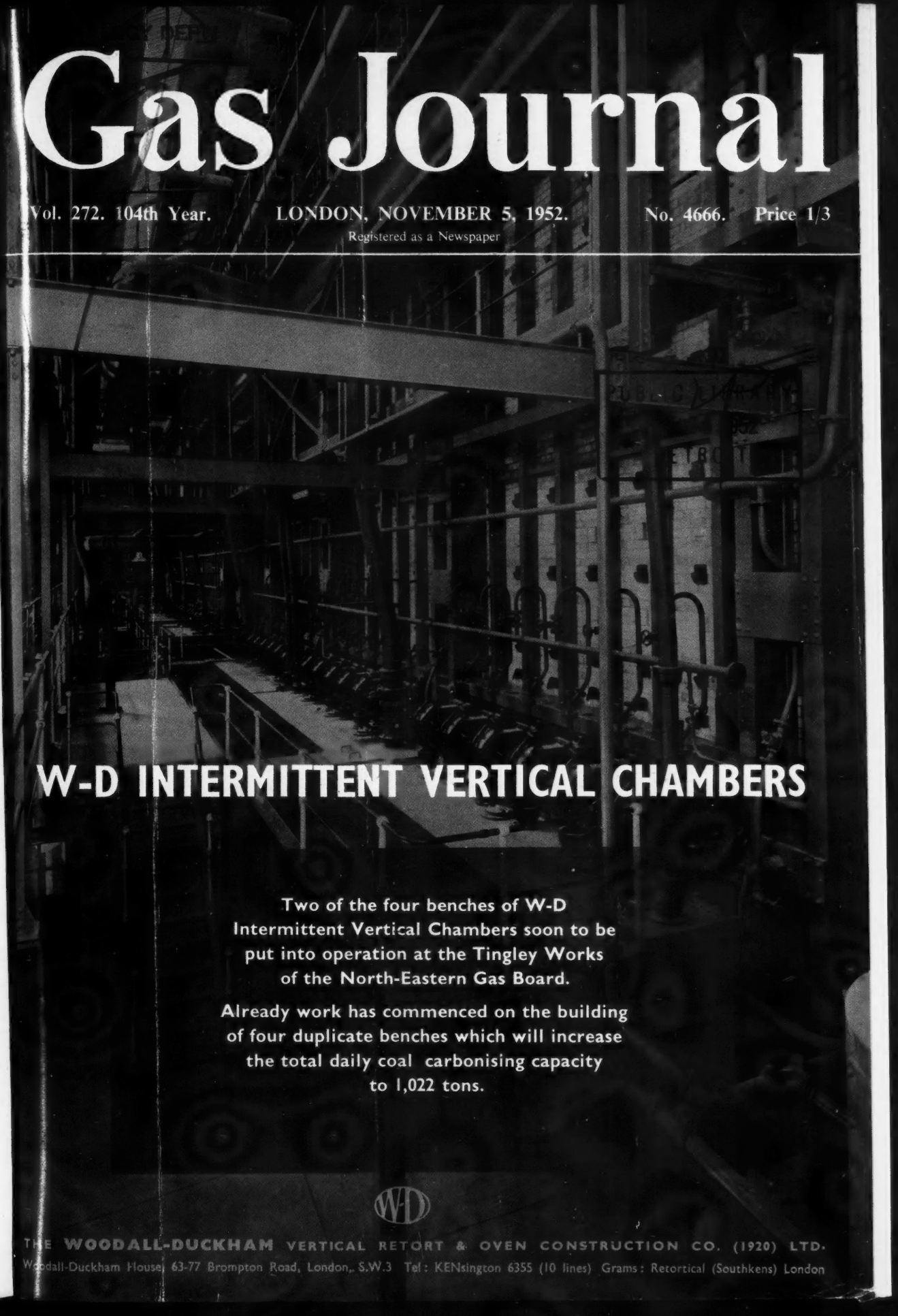
Gas Journal

Vol. 272. 104th Year. LONDON, NOVEMBER 5, 1952. No. 4666. Price 1/3

Registered as a Newspaper



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Already work has commenced on the building of four duplicate benches which will increase the total daily coal carbonising capacity to 1,022 tons.

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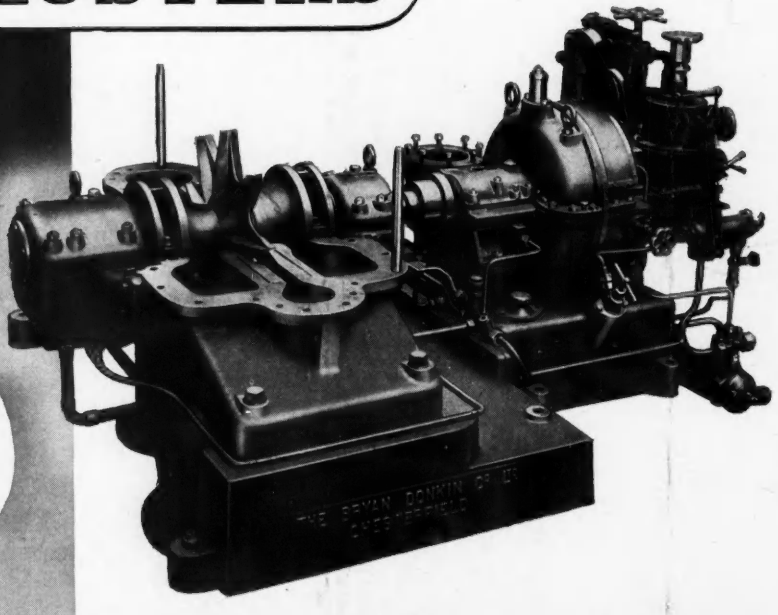

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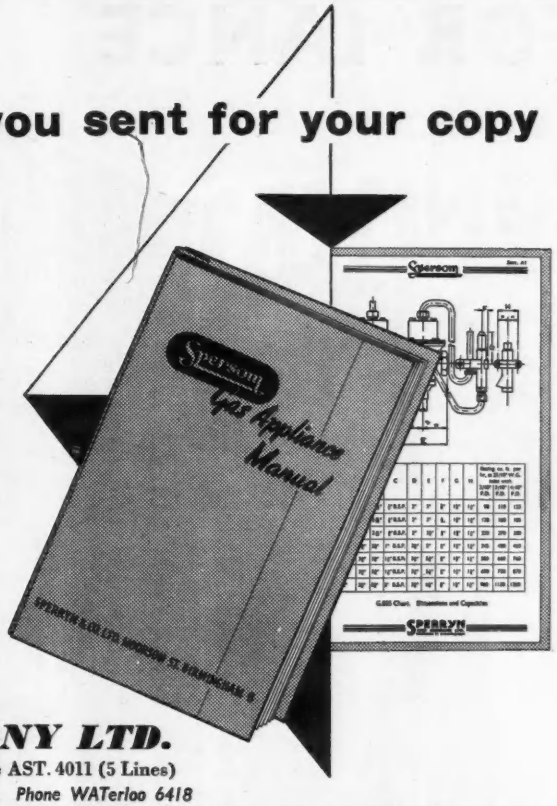

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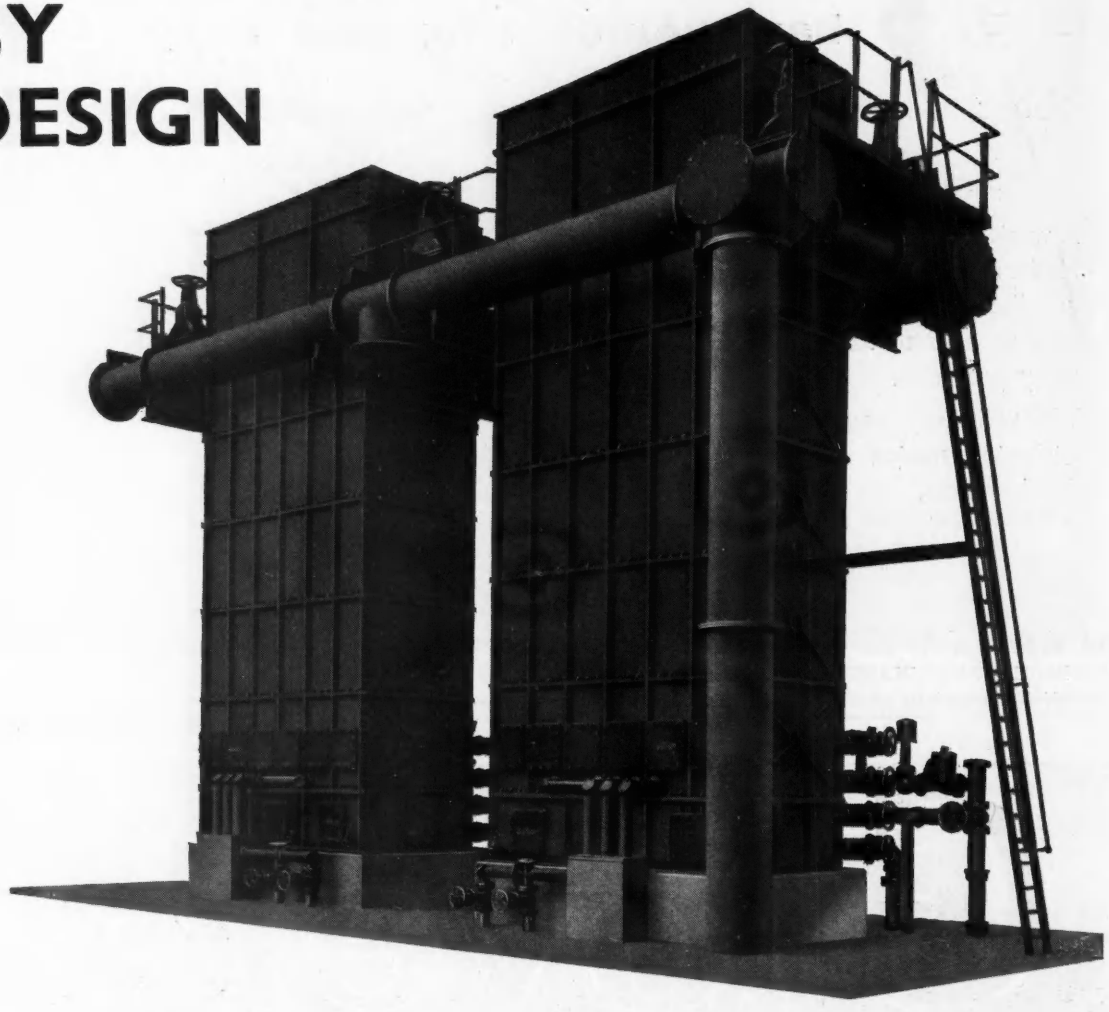

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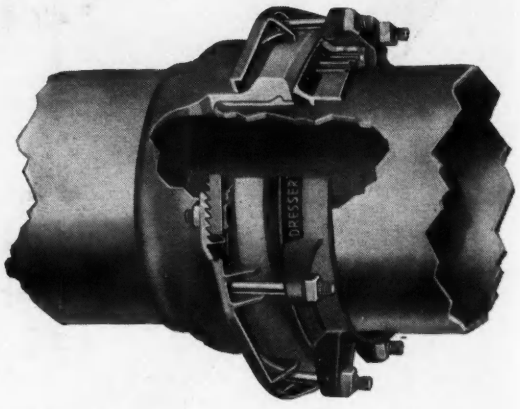

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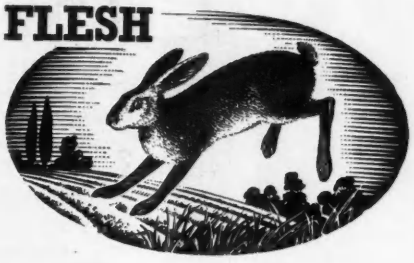

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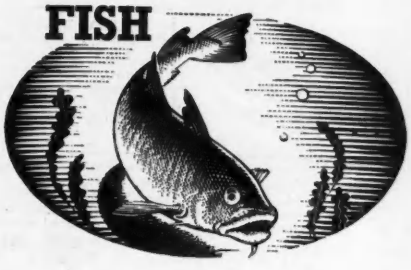

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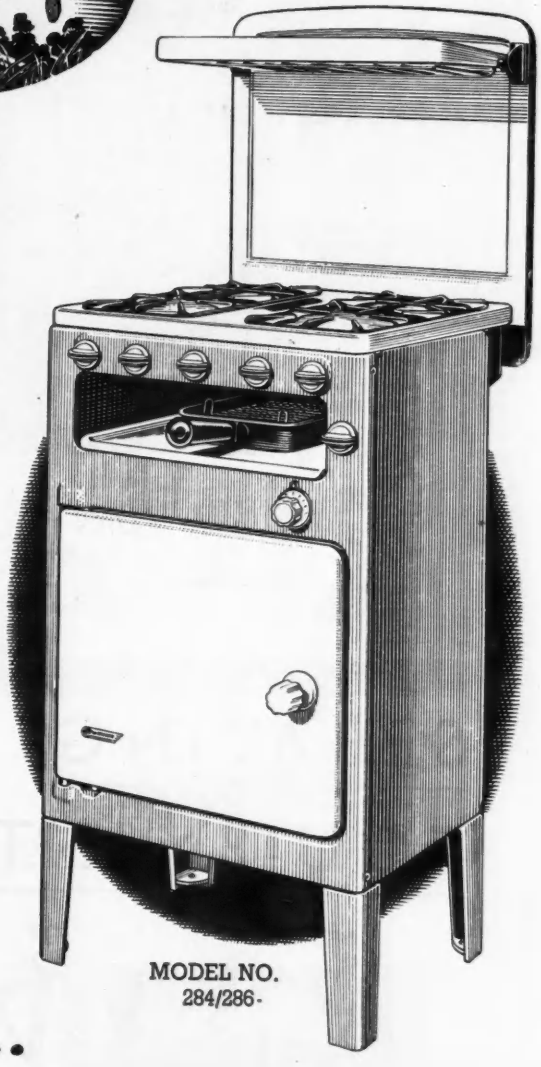

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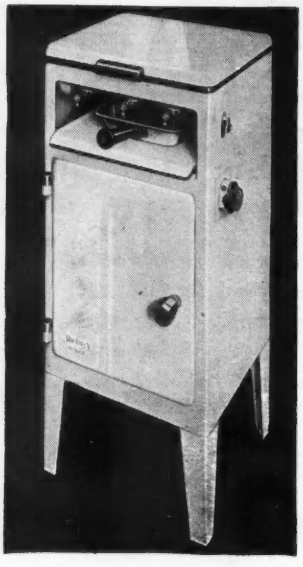

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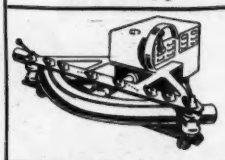

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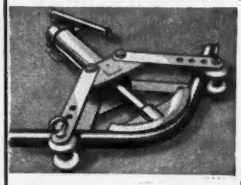

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Single stage pump. Portable-folding wing-head. steam and gas tubes: ⅜", ½", ¾", 1", 1¼" and 1½". Electric: ⅜", ½", ¾", 1", 1¼" and 1½". Full 90° bend.

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Formers for ⅜", ½", ¾", 1", 1¼", 1½", 2", 2½" and 3" tubes. Open type wing-head for easy bending of prefabricated pipework.

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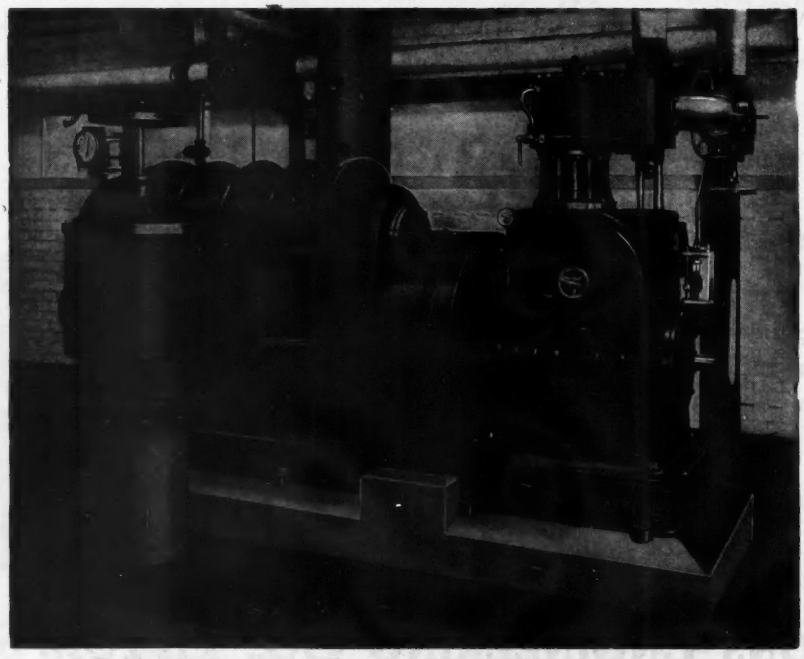

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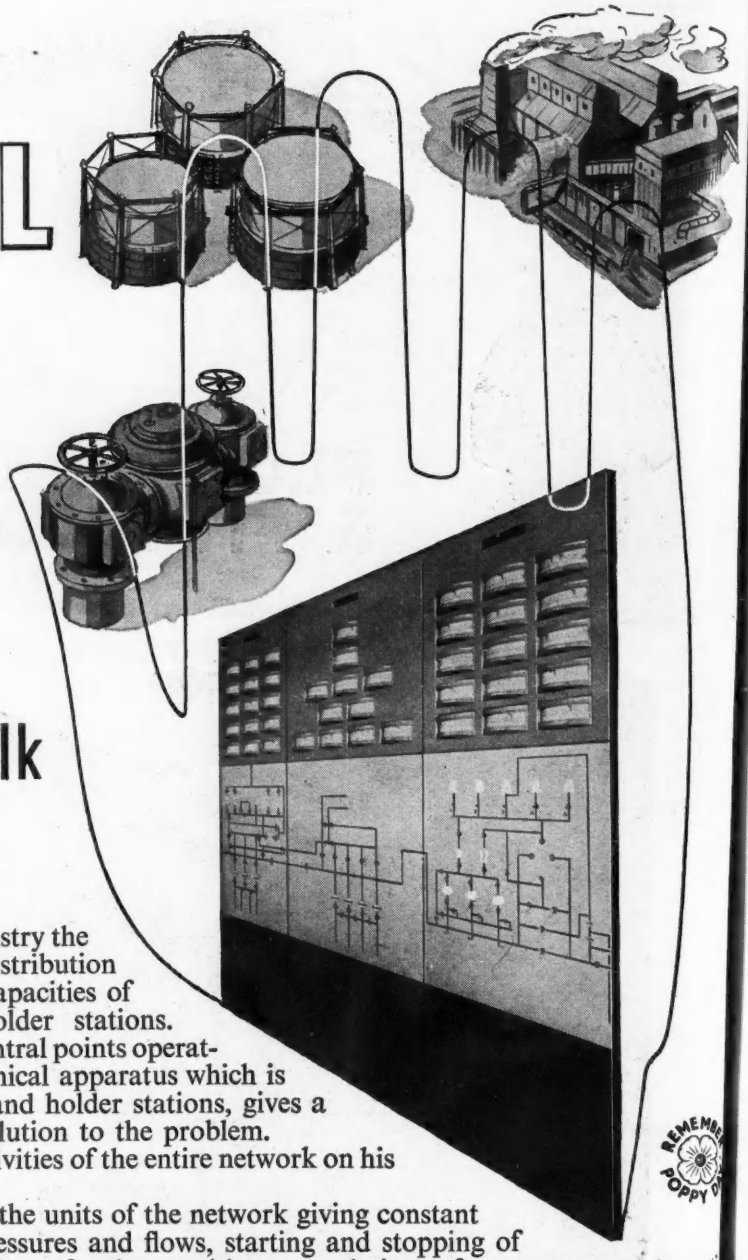

With the integration of the gas industry the need arises for unified systems of distribution irrespective of the locations and capacities of the manufacturing units and holder stations. Centralised remote control from central points operating in conjunction with the mechanical apparatus which is now available for manufacturing and holder stations, gives a highly efficient and economical solution to the problem. The control engineer "sees" the activities of the entire network on his diagram.

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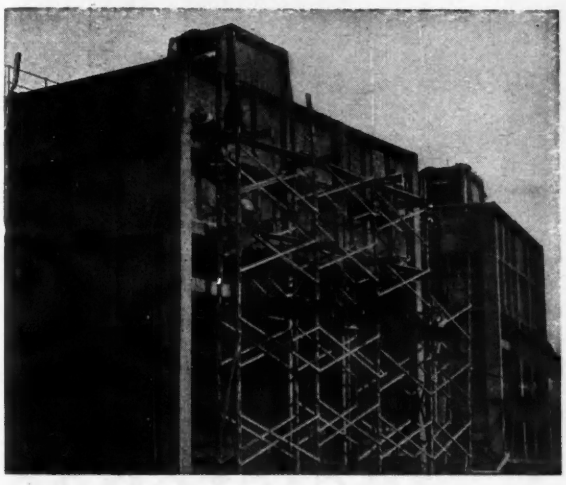

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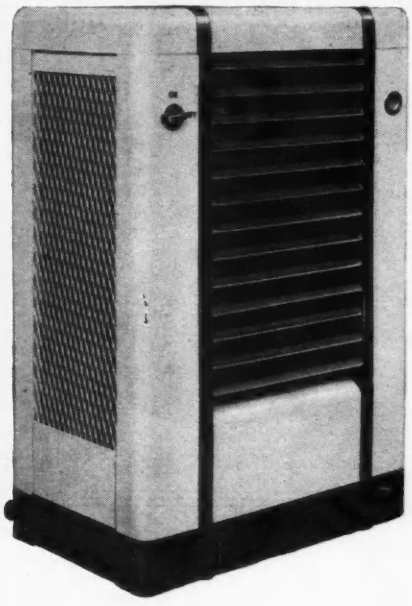

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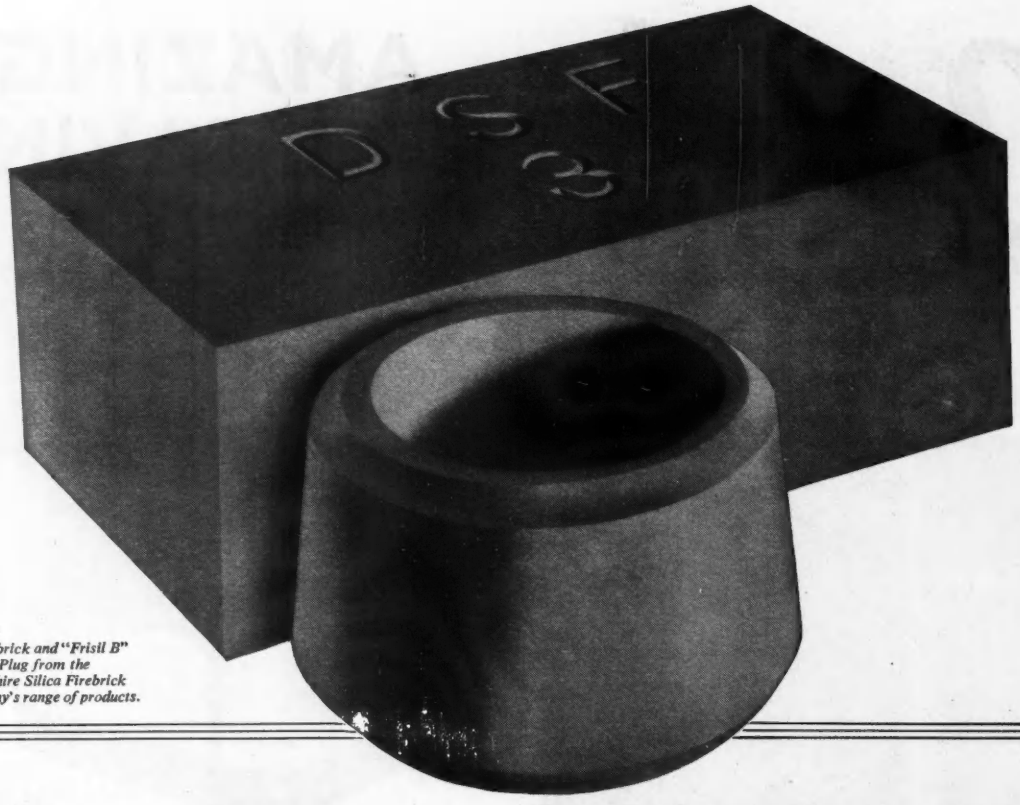

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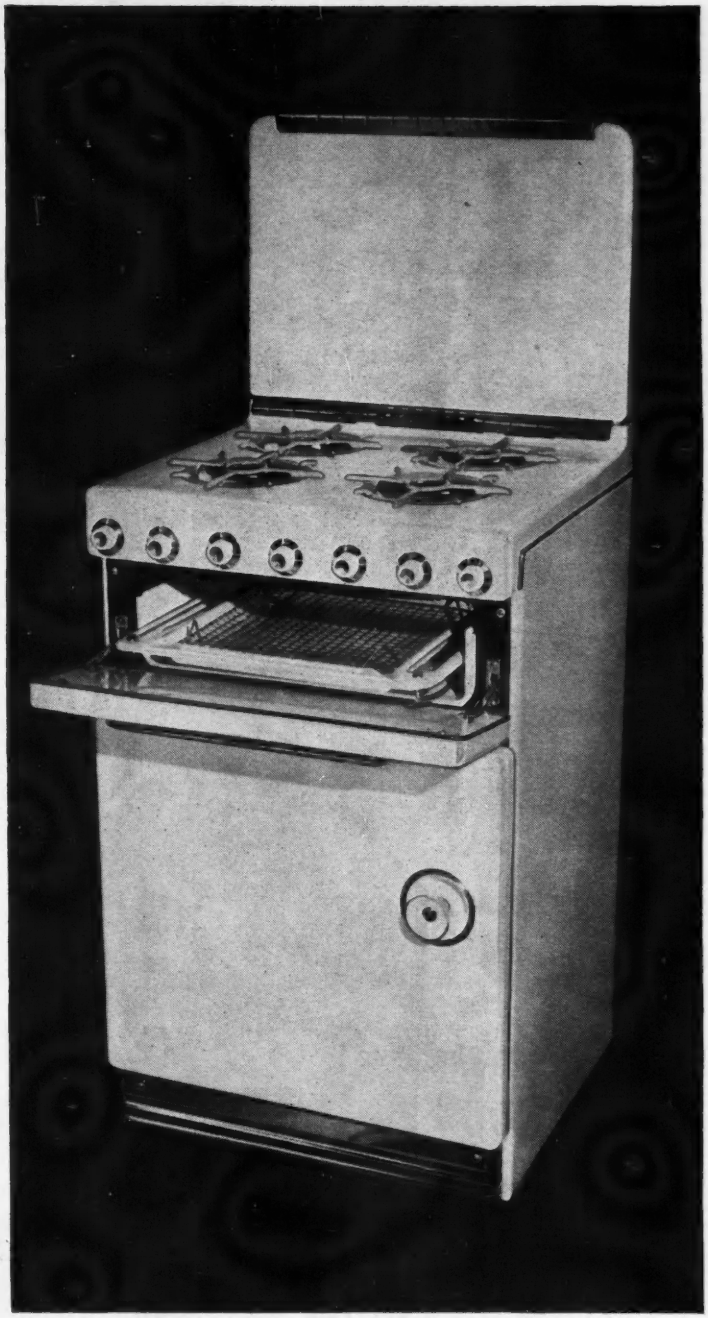

In all these leading publications full-page advertisements are appearing to the end of the year: Punch, Good Housekeeping, Sphere, Illustrated London News, House & Garden, Homes & Gardens, Ideal Home, Woman's Journal.

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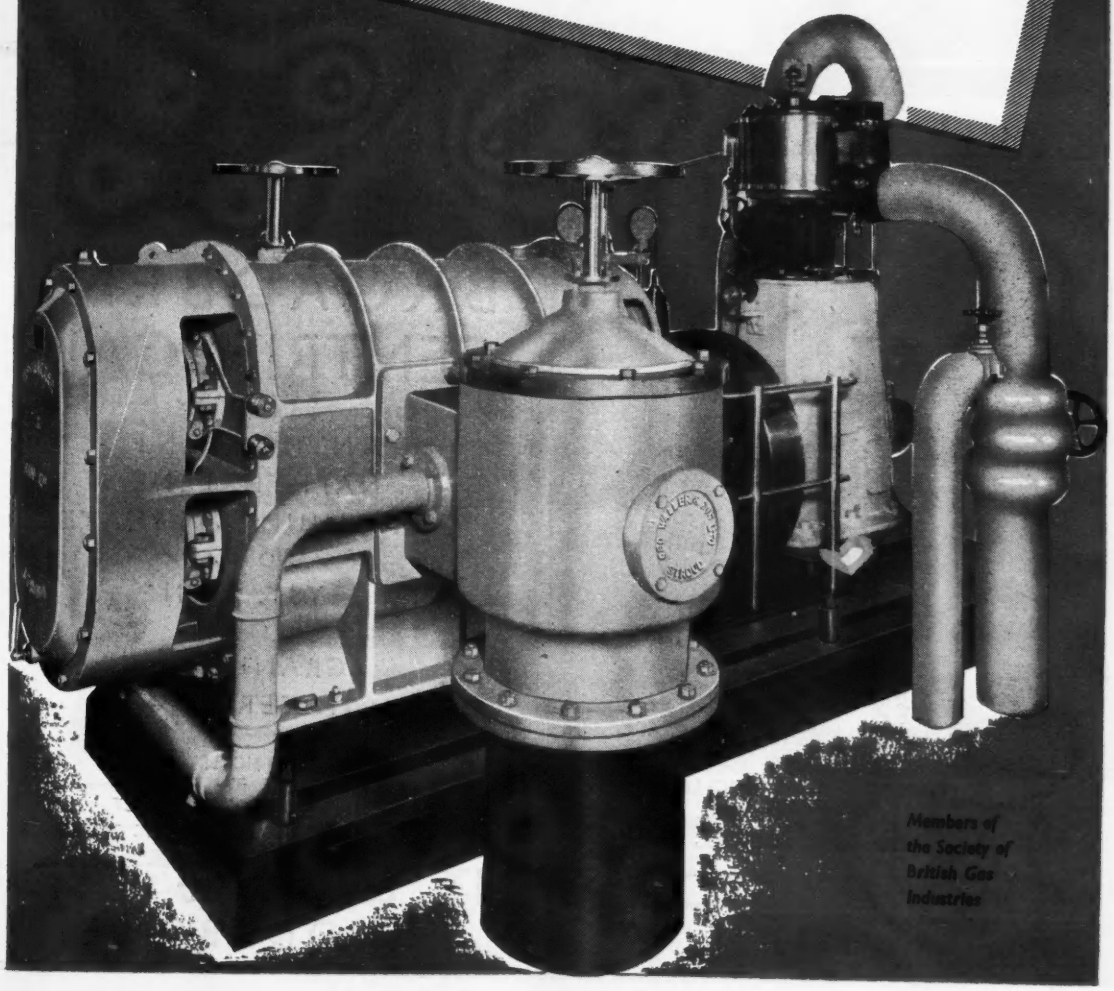

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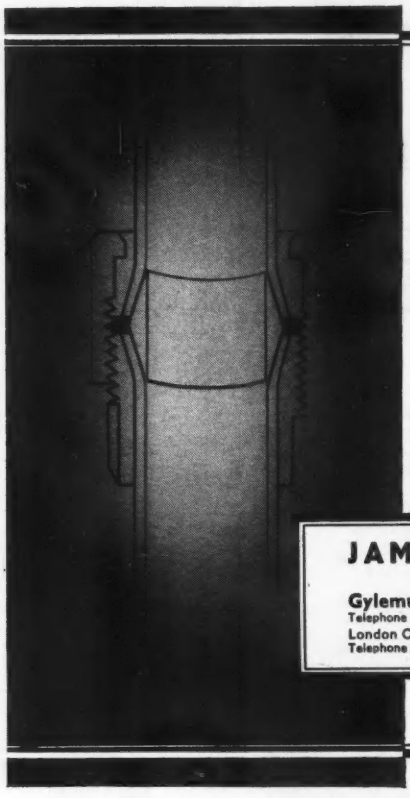

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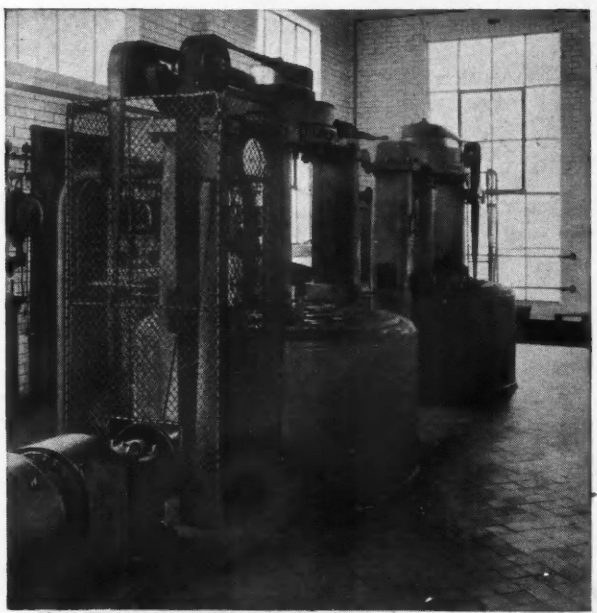

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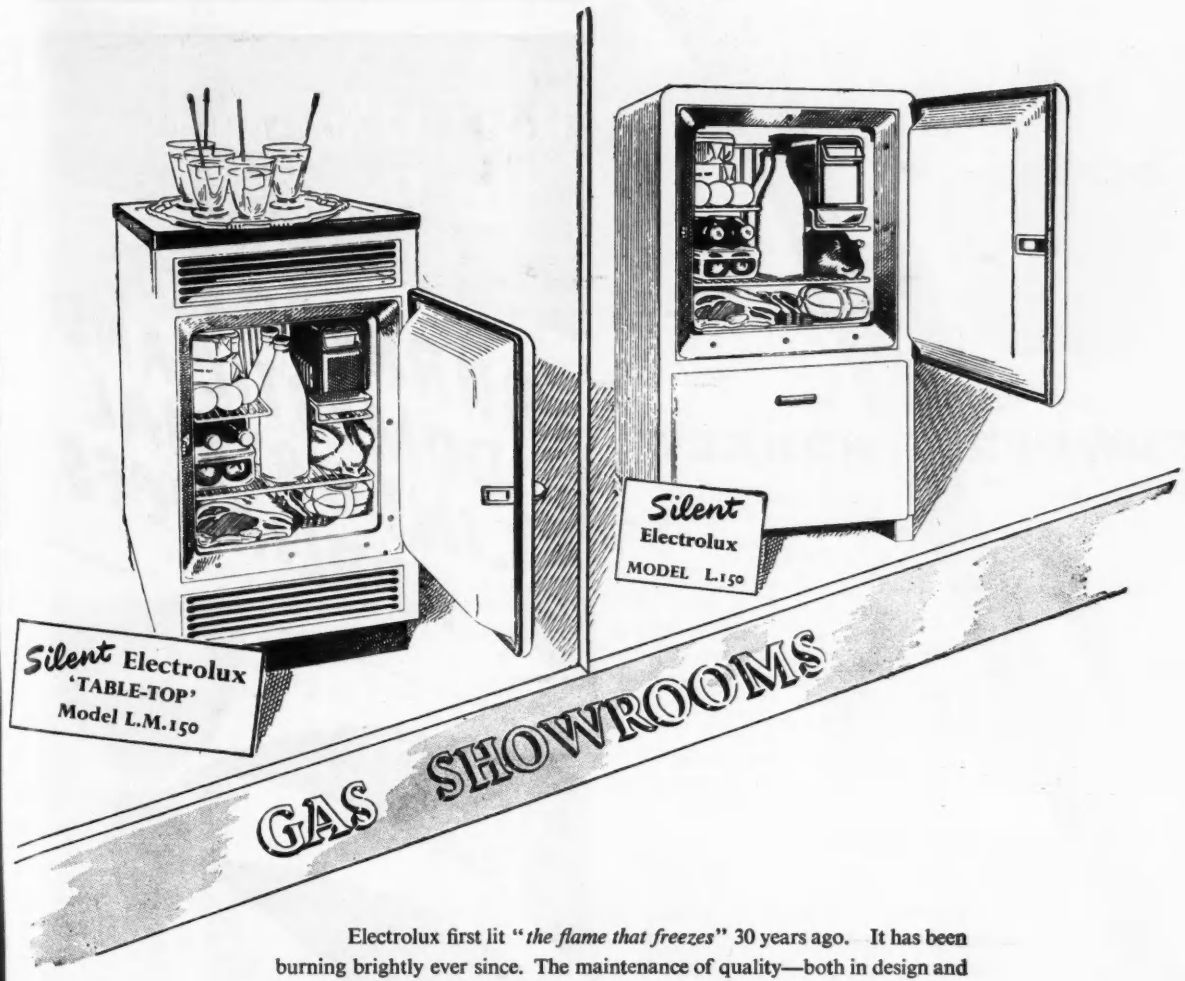

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. . . or technically "Aerator Tool" . . . handy at picking up soot, and ash from the top of retorts and elsewhere where they accumulate in quantity. Won't choke either and there is no cartage problem and no disturbance into the air. The soot or ash is conveyed straight to the B.V.C. portable exhauster plant where it is water cooled and delivered into a bin for disposal.

This is just one example of B.V.C.'s modern approach to the problems of industry, using pneumatic suction. May we send you full particulars of B.V.C. soot, ash and dust removal technique in connection with the Gas Industry?

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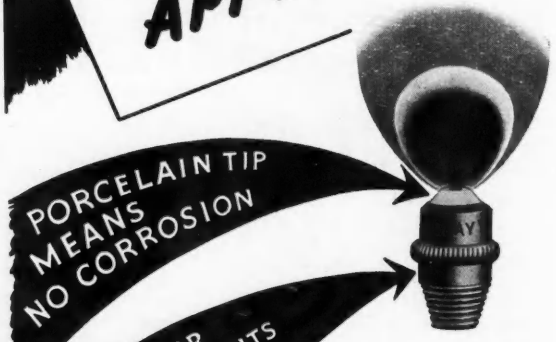

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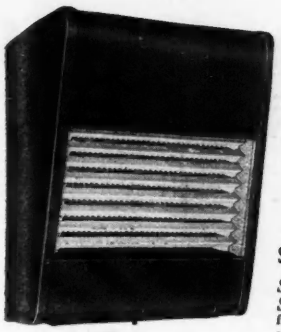

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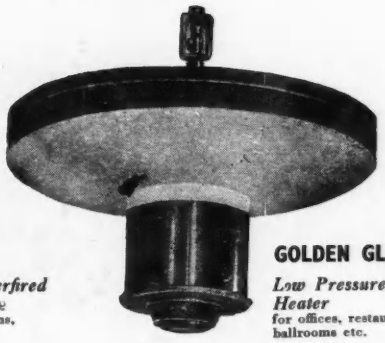
for factories, canteens, workshops etc.



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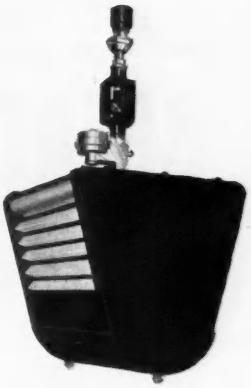

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Attractively-designed double-sided overhead heater, suitable for relatively low-ceilinged premises where the high intensity Supertherm Heater cannot be used. Ideal for canteens, halls, stores etc.

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The cooker with the glass oven door

Many modern gas-cookers have good points in common. It isn't always easy for the customer to choose between them. But there's one, at least, that *does* have something the others haven't got! The Vulcan's famous Glass Panel Oven Door is an outstanding feature, and one that any housewife will at once appreciate. And it isn't the whole story. *Every* Vulcan feature makes for better cooking—and brisker sales!

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- *Automatic heat control.*
- *Choice of attractive finishes and oven capacities.*

And every Vulcan Cooker is TRIPLE-TESTED—before, during and after assembly.

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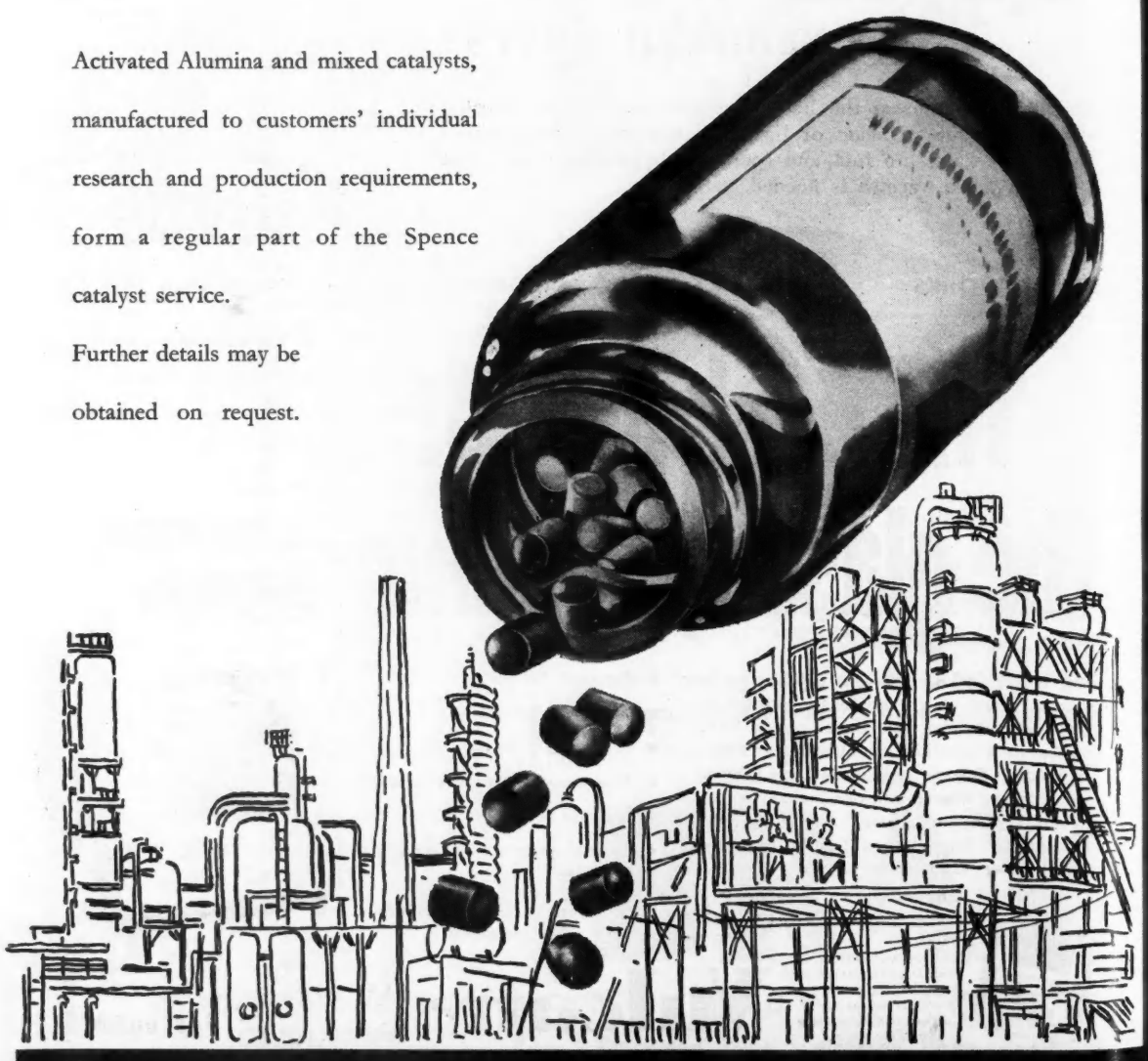

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Coke Grading Plant with Storage Bunkers of 200 tons capacity. A scalping screen and main screen grade the coke into four sizes.

PROVAN
An installation of ten Reciprocating Coke Screens on existing bunkers and here shown the debreezing equipment at the outlets.

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OTHER WORK IN PROGRESS

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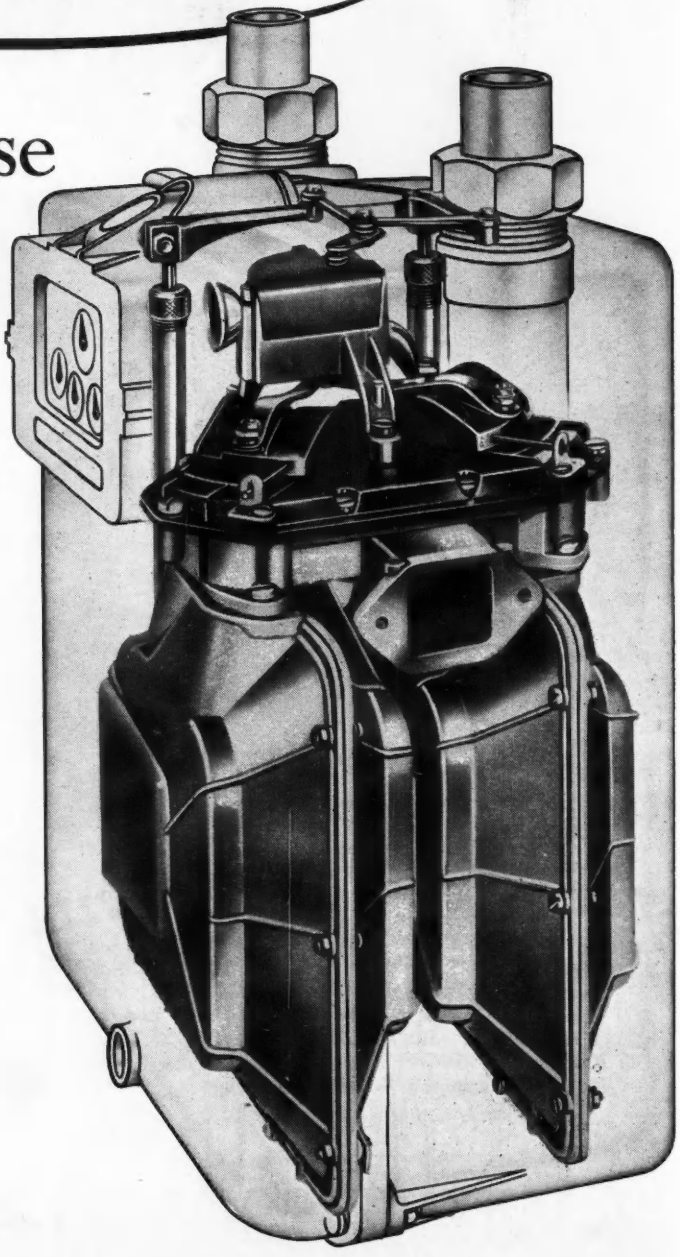
Flomaster
with new 2-part case

A Better case for the best of Meters



In the Flomaster, Begwaco have made their famous meter even better by housing it in a simple two-part case — a development made possible by advanced techniques in pressure die casting. The new two-part case is simplicity itself to take apart; after breaking the seal, undo five screws and the case is open; take out two more and the whole measuring unit can be removed. That's all there is to it, except to say that the unrivalled standard of accuracy and service is as high as ever.

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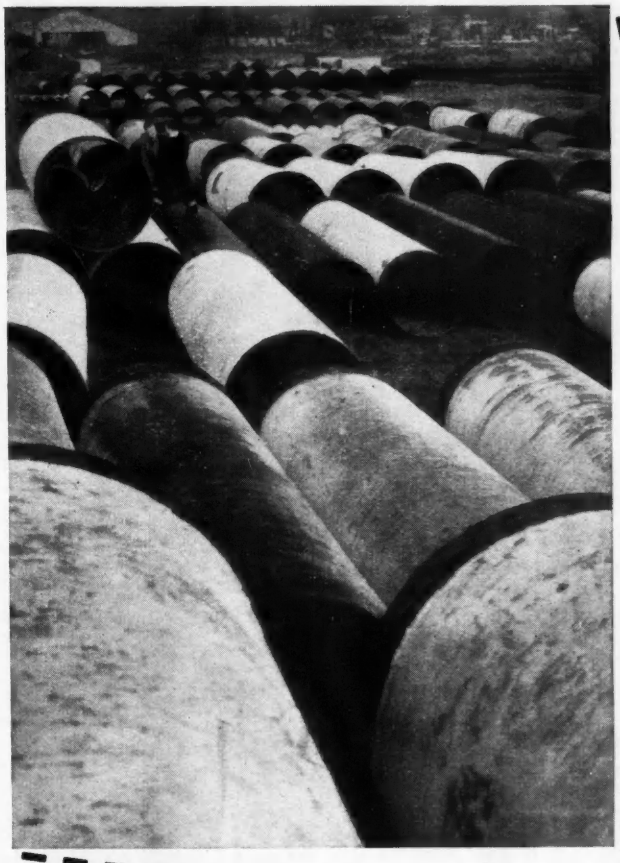
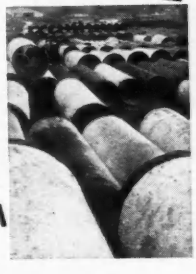


Pipe sections coated with "Bitumastic" Enamel, awaiting transportation to trench.

Don't minimise corrosion risks!

The incidence of corrosion in pipes buried in the ground is much greater than that in structures placed above ground. This is not surprising when it is realised how soils hold and concentrate corrosive agents such as acids and salts in solution. Only by careful pre-treatment of surfaces can pipes be given that measure of protection so essential for a long service life. The great mileage of pipes protected by "Bitumastic" products indicates how these materials have come to be accepted as an integral part of this treatment.



"BITUMASTIC" REGD. TRADE MARK Anti-Corrosive

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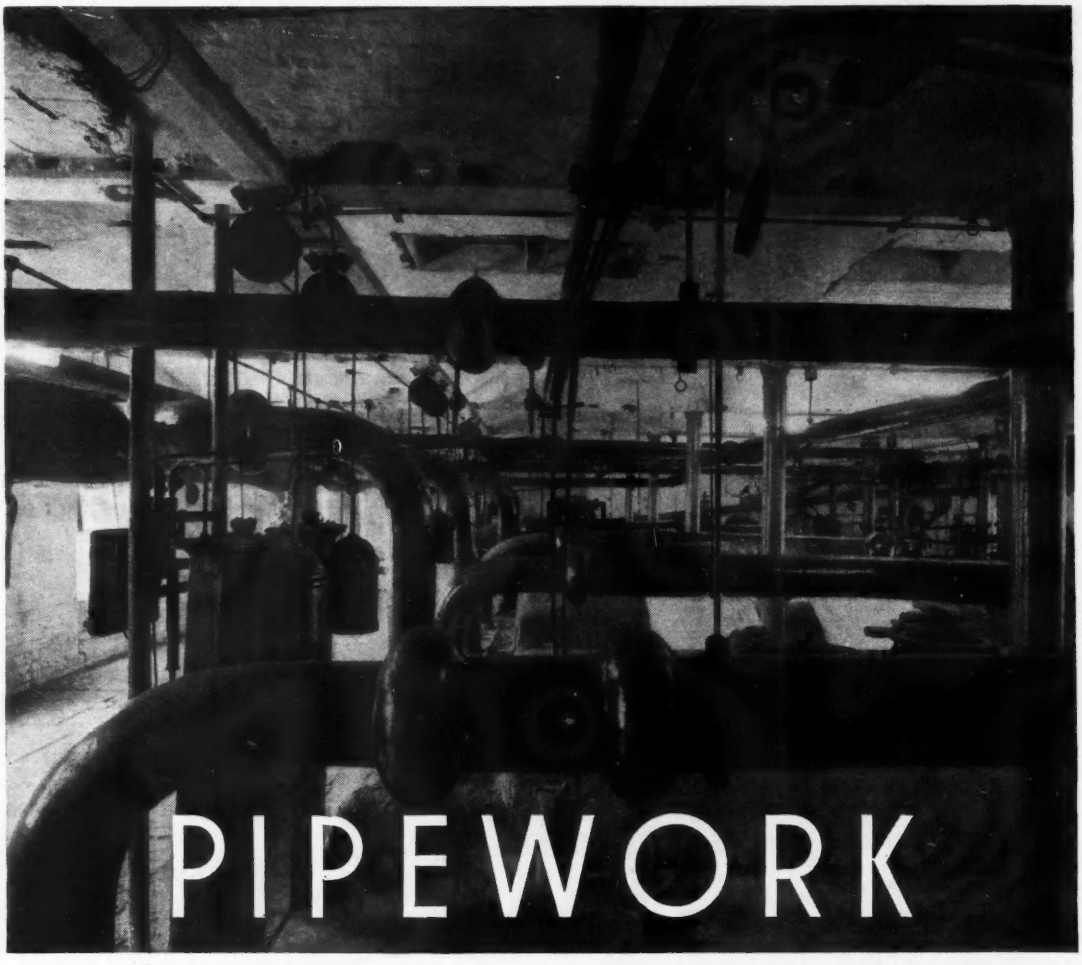
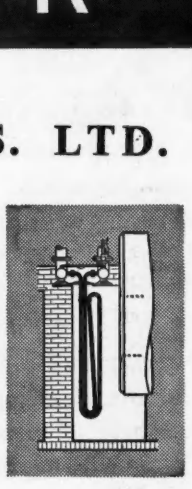


for JOHN BRIGHT & BROS. LTD.

This view of a boilerhouse at one of the Rochdale mills of this famous firm of cotton manufacturers shows pipework designed, fabricated and erected by us.

We first supplied pipework and installed superheaters at Messrs. Bright's over 40 years ago and, as Mr. J. H. Sutcliffe, their Chief Engineer, stated recently: "We have come to rely entirely on Bolton's for work of this nature."



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4 BOLTS IN CONCRETE

Fixed in 38 minutes

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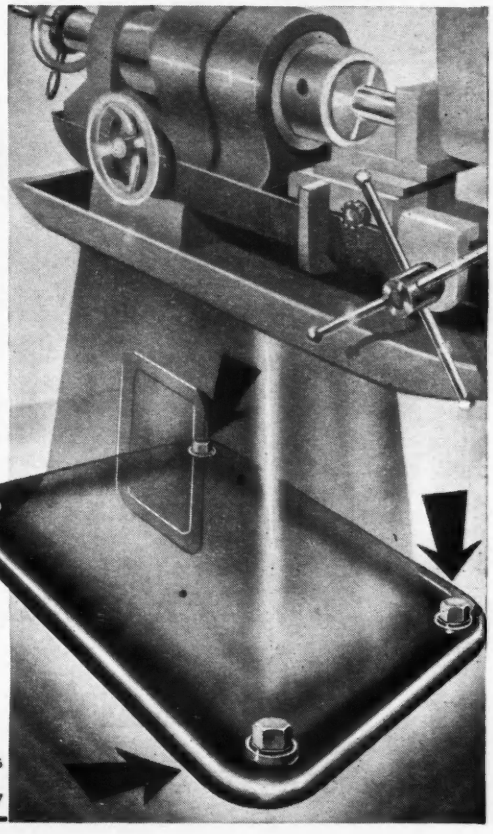
If you have a fixing problem, please write us. Our Technical Service Dept. will be delighted to advise you free of cost or obligation.



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EXPANSION BOLTS

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ONE MAN AND HIS STACKER . . .

he loads with it

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Tows it

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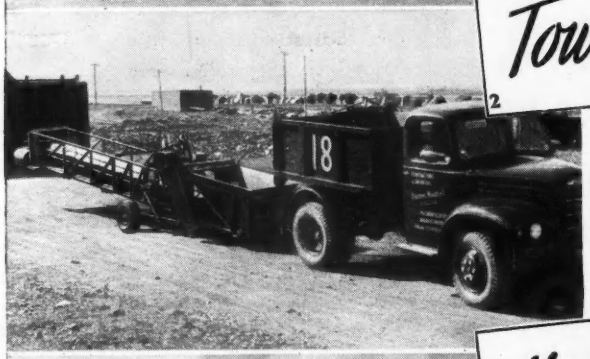

Unloads with it

3

It is amazing what one man can do when he has a C. & T. Light Mobile Stacker to help him. The photographs show one of these versatile, roadworthy machines loading waste firebricks into a lorry (photo 1), then being towed to a railway siding (photo 2) to discharge the bricks into a railway wagon (photo 3). The entire job is carried out quickly and simply—a much more efficient method than laboriously throwing the bricks into the vehicles. (Photographs by courtesy of Thomas Mouget and Co. Ltd., Contractors, Middlesbrough.)

The C. & T. Light Mobile Stacker is available in four sizes with maximum delivery heights between 10 ft. 8 in. and 18 ft. At minimum elevation the exceptionally low overall height allows easy access to all parts for maintenance. Drive is electric, diesel or petrol.

Stacking coal in a cellar within 2 ft. of the ceiling . . . a faster, less costly method than barrowing and shovelling as done previously. (Photograph by courtesy of Jowett Cars Ltd., Bradford)

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SUTTON OAK · ST. HELENS · LANCS

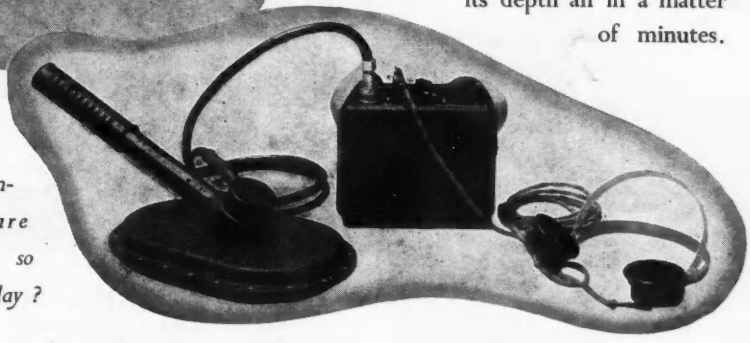
CT 3242 Telephone: St. Helens 3397

Now where in earth can that pipe-line be?

Yes, well may he scratch his head, for finding a pipe that is buried somewhere under the ground at an unknown depth is no easy task. Of course, if he had

The 'CINTEL' Portable METAL DETECTOR with Oscillator

it would be no problem at all, for he could locate the pipe, trace its route and determine its depth all in a matter of minutes.



Full details of this essential instrument are available on request, so why not write to-day ?

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REGISTERED TRADE MARK

New exclusive features

Extra Speed

Hydraulic operation

"POWER CROWD"

Rugged Construction throughout

Extra Reliability

Increased LOADS

POWERful double acting hydraulic jacks CROWD the material (or spoil) into the bucket whilst still in the stock pile. This ensures full payload each cycle with no spillage.

● Exceptional stability is achieved by turning the bucket into carrying position with a full load just above ground level — the low centre of gravity of the unit in this position means COMPLETE SAFETY when travelling over the most uneven ground.

BRAY H.L. SERIES HYDRALOADER

The new series Hydraloader incorporates every advancement and improvement to increase output and lower material handling costs. Exclusive features include Hydraulic Power Crowd, which, by means of a simple control loads, raises, dumps and lowers the bucket.

Power Crowd speeds up loading cycle, ensures full load, accurate positive dumping, resulting in greater yardage. The Hydraloader has been field tested and proven. It is ruggedly built throughout and is constructed for long life with a minimum of maintenance cost.

Full range of attachments available with standard fitments.

BRAY HYDRALOADERS ARE AVAILABLE IN ¾ CU. YD., 1 CU. YD., 1 CU. YD. AND 1½ CU. YD. BUCKET CAPACITIES

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Gas Journal

104th YEAR OF PUBLICATION

EDITOR: NORMAN S. SMITH, B.Sc. (Gas Eng.)

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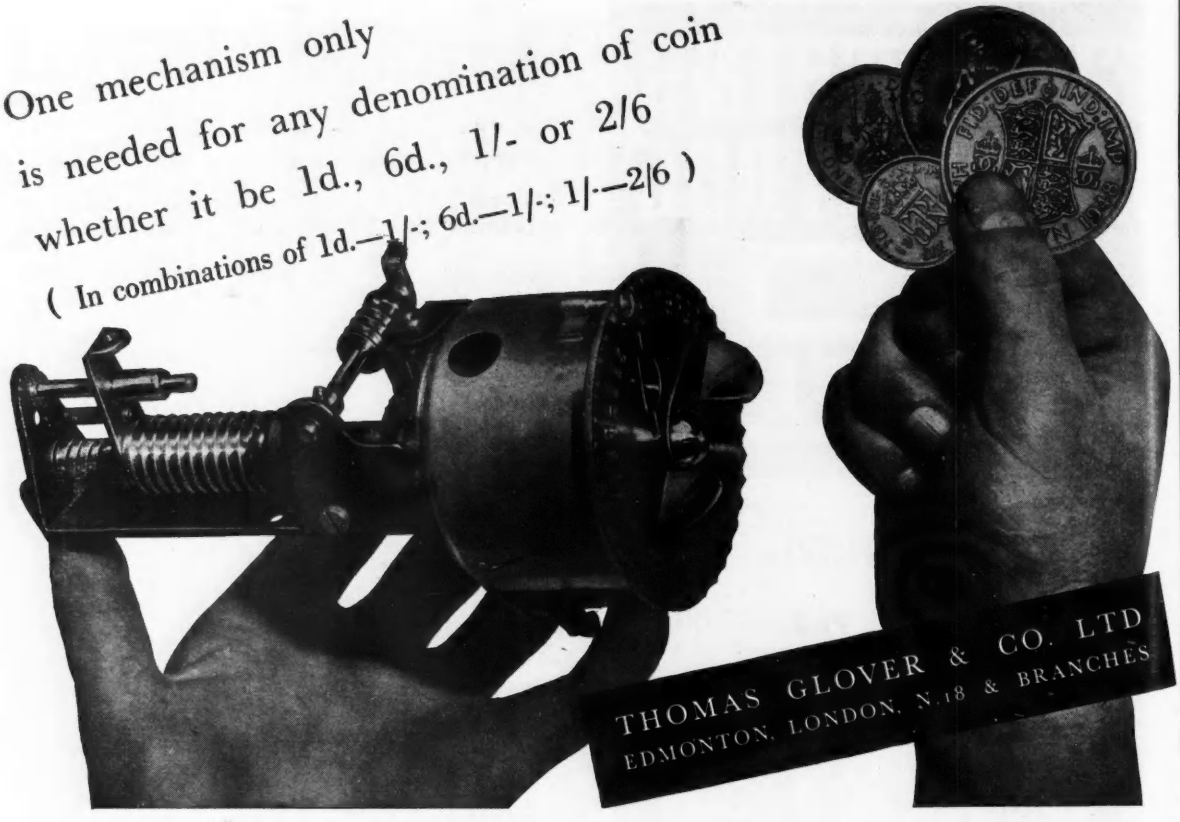

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GAS JOURNAL

VOL. 272. No. 4666 104TH YEAR NOVEMBER 5, 1952

DEBATE ON FUEL AND POWER RESOURCES

'TO me, this has been a very strange debate.... I have never heard a coal mining debate conducted so quietly, so patiently, and so reasonably as this one.' We quote from the comments of Sir Albert Braithwaite during the debate on fuel and power resources—*i.e.*, on the findings of the Ridley Committee—in the House of Commons on Tuesday of last week. And it certainly was a strange debate which seldom seemed to get to grips with the major recommendations of the Ridley Committee but, rather, acted as a platform for the reiteration of well known argument. Perhaps the tone of amiability was set by the Minister of Fuel and Power himself. Mr. Geoffrey Lloyd was in urbane mood and quickly announced that the coal position was such as to warrant the freeing from all restrictions, except price control, of 'small rough coal' (untreated coal under ¾ in.) on December 1, the price of which coal will be 'substantially' cheaper than the usual types of house coal. And 'it is good coal—let us make no mistake about that. This is not the bad or dirty coal we have heard about; it is good coal except that it is smaller coal.' After this essay into salesmanship, Mr. Lloyd had further good news. Stocks of coke are good, and the maximum amount of boiler fuel allowed during the next six months is to be increased from 20 cwt. to 30 cwt., providing that the extra 10 cwt. is taken in coke.

The Minister made it clear that the Government wished to hear the views of the House before coming to any firm decisions on the major recommendations. He did, however, reject the suggestion for an independent committee for the co-ordination of nationalised fuel and power industries. He favoured regular meetings of the chairmen of the boards with the Minister presiding. On the domestic coal using side he referred to the 'really remarkable' progress in the production and distribution of the improved grates during the present year, with about 1,700,000 available this year compared with an earlier estimate of 900,000 and a figure of only 200,000 three years ago. These grates, he said, would be able to burn the rough small coal with great efficiency. On the broad question of the use of coal, the Minister explained that he was pushing ahead as fast as possible with the setting up of an independent fuel efficiency service for industry, controlled and financed by industry. The Coal Board, he added, had promised a substantial contribution to the work, and the Ministry's own service would then be contracted to avoid duplication. Strangely enough, the highly controversial recommendation of the Ridley Committee regarding the establishment of a specialised tariffs advisory committee to assist the Minister in his general control over the price policies of the nationalised fuel and power industries was not dealt with during the debate.

As we have suggested, the debate was inconclusive and appeared to be lacking in any sense of urgency. It is interesting, however, to refer very briefly to certain trends of thought—some of them with familiar ring—expressed by both sides of the House. The Ridley Committee was, of course, set up by Mr. Philip Noel-Baker when he was Minister of Fuel and Power, and there is no question that he applied himself with great thoroughness to the tasks of that office. Having praised the work of the Committee and the clarity and comprehensiveness of its analysis of the situation, Mr. Noel-Baker urged that there should be compulsion in the speedier changeover from gas to electric lighting of the streets, that there should be increase in coke production and use in the interest of coal conservation, that there should be fewer types of 'improved' coal burning appliances, and that any appliance which operated at an efficiency below 40% should bear 100% purchase tax. He expressed his conviction that the Government and Parliament should consider whether for the next period of years domestic heating will not be a curse to the British Electricity Authority, as quite certainly it was two years ago, and whether 'in the national interest we ought not to seek more positive and active measures to promote the use of gas.' On this aspect the remarks of Mr.

Robens, who has applied himself to the problem with energy and assiduity, were pertinent and amusing. He spoke of the sales tactics of the 'electricity boys'—and here we quote from his comments: 'Even at a time when we were having very drastic sheds the commercial men in electricity . . . . were still selling as hard as they could hot water heaters and everything which could be used electrically. If the Minister wants to stop it he will have to stop it himself, for they will never do so.' And he added, 'I remember discovering the peak load and what caused it. I said "Surely it is the electric cooker in the morning?" I was told that it was not the electric cooker. Then I said "It must be the immersion heater." But I was told it was not. We went through the whole range of electrical appliances, and I was told that none of them caused the peak load. What is worse, if one listens too long those people will prove it. I warn the Minister not to listen too long to them or else he will be in the difficult position of knowing, on the one hand, that he is right and, on the other hand, that "It ain't true".'

We anticipated that Mr. Gerald Nabarro would join with his accustomed gusto into the polite fray. His arguments and contentions on the use of fuel and power have been the subject of comment in our columns (*Gas Journal* of April 2). In the debate he reinforced his contention that new electric power should be used primarily for factory production and for lighting, for minor domestic appliances, for intermittent and occasional space heating, but never for continuous space heating or for water heating—that the B.E.A. should desist in pressing sales for heating, cooking, and water heating. 'Generally speaking,' he remarked, 'gas is always twice as efficient as electricity for these domestic purposes.' He argued that it is unreasonable that there should be complete and unbridled freedom for any consumer to choose whatever fuel he likes without any guidance from the Government or any of the national authorities, and he cited his experience of Gaz et Electricité de France in Marseilles, where gas and electricity, both nationalised, share the same showroom. 'If,' said Mr. Nabarro, 'a housewife wants a new cooker she goes to the showroom where a really well-informed salesman or saleswoman who knows the technicalities of the fuel and power position in the area sees her. If there are gas mains she will be sold a gas cooker.' On the same subject, Mr. George Darling—who said how much he would like to have an idea of the speed at which the Government mind is working on the recommendations of the Ridley Committee—also suggested that a free choice for the consumer in present circumstances is often the wrong choice inasmuch as the consumer does not know what he or she is choosing. 'Until we make it perfectly clear to all consumers what are the facts, the relevant circumstances, as well as all information about domestic appliances and industrial methods of using fuel and power, and until all consumers both industrial and domestic know precisely why they have a choice, we cannot honestly talk about a free choice, because without that information there cannot be freedom of choice.' As we have said on previous occasions, gas is not a bit afraid of consumers' freedom of choice and open competition provided the 'appropriate framework' is one which favours no one.

We have given an idea of this amiable debate, which concluded on the quiet note that in fact the House had taken cognisance of the report of the Ridley Committee and also of the last annual reports of the nationalised fuel and power industries.

COMPETITION AND SALES

ON a later page we give an extract from a penetrative analysis of gas and electricity sales in the North West during the period 1921-1950. It is taken from *Focus*, a publication of the North Western Gas Board which within small compass presents from time to time factual surveys which have a bearing on the gas industry. Actually this is the third of the series, and though the publication is intended primarily for the Board's own employees, the present analysis has implications extending far beyond the Board's area. It is shown that since 1921 gas and electricity sales in the North West have increased much more rapidly than could be accounted for by increase in population. Their progress has been due to growing demands for heat and energy in convenient and controllable form. The trend of demand has been to some extent influenced by the level of employment in the area, but the conclusion is drawn from the analysis that the main factor determining the course of gas and electricity sales, particularly prior to the war, has been the element of competition between the two industries. It is suggested that the rapid increase of electricity sales and the virtual elimination of increase in sales of gas during the 1930's is attributable to the success of electricity in the competitive struggle. Since the war the advance of electricity has continued and has again been most marked in the domestic field, where rivalry with gas is keenest.

A further outstanding point is that the only peacetime precedent for the post-war rate of increase in annual sales of gas occurred at a time when competition from electricity was still in its early stages (1922-26) and lasted for only four out of the 17 years for which data on which the comparison is based are available. And it is put forward that an annual rate of increase of more than 4% can be maintained only when competition with electricity is relatively light. This is a serious contention. On the other hand it is also evident that the post-war rate of increase in electricity sales, so far from being unprecedented, actually represents only about two-thirds of the rate which prevailed over most of the pre-war period. In fact, the practical limit of electricity supply has been the restriction of capital investment programmes, rather than the extent of demand.

The provocative, stimulating, analysis in *Focus* concludes that, since the present degree of competition with electricity is abnormally light because it is influenced by special restrictions, one must expect the gradual return of 'normality' to bring an increasing pressure of competition. 'And unless the gas industry is to find an entirely new future in a market based predominantly on industrial and other non-domestic

sales, such a prospect is bound to focus attention on the competitive strength of gas in the domestic field, where the industry is still most heavily committed, and where past experience has shown the strongest challenge from its nearest rival.'

It will be gathered that the analysis to which we refer sets out courageously to record harsh and unpalatable facts and is an unusual document for distribution among employees of a gas board. But there is nothing to be gained by shirking issues and in our opinion the document—it runs to only four pages of print, including pertinent graphs and tables of figures, and is an example of word economy—will serve as a challenge to clear thinking and, as a corollary, a spur to renewed endeavour. The gas industry will certainly need all the clear thinking and all the effort it can muster. Complacency can only spell retrogression.

A SUCCESSFUL EXPERIMENT

THE SECOND STAFF CONFERENCE of senior officials of the North Eastern Gas Board which we attended at the Old Swan Hotel, Harrogate, last week, was largely in the nature of an experiment, and what a very successful experiment it turned out to be. The Board decided to depart from the orthodox type of conference in favour of the group discussion principle. Instead of the delegates having to spend most of the time listening to papers being read on subjects which, while of interest to some, often do not necessarily hold the interest of the majority, they were able to take active part in the discussion groups, which covered a variety of subjects—namely, 'Engineering,' 'Distribution,' 'Commercial,' 'Accountancy,' and 'Industrial Relations.' We were able to visit the different groups while they were in session and we were impressed by the informality with which the proceedings were conducted by the Board's group general managers, who acted as discussion group leaders. Each member taking part in the discussions had the opportunity to have his say and air his views with complete freedom. It was noticeable that the Chairman, Deputy Chairman, or Board Member, in no way participated in the discussions. We are convinced that much good will result from this conference to the benefit of the North Eastern Gas Board and its personnel. Those taking part were allowed to talk to each other, instead of being talked to—an excellent example of joint consultation.

SAFETY FIRST

'WHEREVER POSSIBLE all picks, pneumatic tools, bars, and wedges should be of non-sparking materials. During venting only non-sparking tools should be used.' This is quoted from the 'Code of Practice for the Safe Operation of Oxide Purifiers' issued in 1950 by the Institution of Gas Engineers after consultation with the Factory Department. It applies to conditions where inert gas purging is not adopted. In view of this strong recommendation—a necessary one in view of safety—we are pleased to publish today on later pages a technical article on non-sparking tools by Mr. C. H. Meigh, who describes the lines on which development work has been done and is still proceeding in collaboration with gas engineers in various parts of the country. The author explains that pneumatic tool holders were designed for high tensile steel tools and are widely different in types and sizes. Some are unsuitable for tools in non-sparking material. The hardness of the oxide to be worked and the working conditions vary from one works to another, so that test results on tools are not necessarily comparable even though they are made available to the producer. To attain complete success with non-sparking tools, investigation of design should not be limited to the loose tools, but should start with the pneumatic tool holder, and, this would bring about a large degree of standardisation and reduction in costs of loose tools. There is also the human element, typified by the faithful foreman who holds the opinion that as non-sparking tools are more costly they should give a longer life than steel tools, irrespective of the way they are handled. These and other difficulties, the author comments, render progress in developing percussive tools slow and costly, but progress is being made and development work generally will be facilitated when the fundamental requirements and basic facts relating to the material become better known through practical experience in the production and use of the tools.

JUNIORS AND INCENTIVES

THE FIRST JUNIOR GAS ASSOCIATION was formed 54 years ago because there was a deficiency of classes for the younger men in the industry. The Manchester Association and all the other 10 associations formed at intervals since 1898 have striven—and with marked success—to promote the technical interests of those who want to get on. Most of the former companies and municipal gas departments provided some sort of educational facilities, and since vesting day the area boards have not only accepted their statutory responsibilities regarding training but have recognised the value of the junior associations and have supported them morally and socially, not begrudging the time taken for attending meetings or the cost of reasonable sustenance on the occasion of exhausting visits. Area boundaries are not identical with those of the junior associations, but that is no disadvantage, and on the whole we think the junior associations are in a stronger position today than ever. Sometimes, as Mr. T. R. Cameron pointed out in his presidential address to the Scottish (Eastern) Juniors, when a gas engineer crosses the imaginary line that separates the senior from junior he ceases to take part in junior activities. There are exceptions—Mr. Cameron said 'few,' but in the south there are many—whose continued interest and participation have been invaluable. Some of the juniors' best friends are those who have long since passed the junior stage; for instance, Mr. J. T. Haynes, now Senior Vice-President of the Institution, who, speaking purely personally at a recent meeting of the South Western seniors, questioned whether, having provided the necessary facilities for young men to be trained in the gas engineering profession, they were going to retain their services on the salaries at present customary in the industry. With adequate reward in view the new entrant will not be thwarted by the demands made on his time for completing his studies. There will probably be a shortage of trained personnel for some time, and the gas industry will have to enter the open market and compete for its share of the national brain power.

One important change in the outlook of the junior entrant was mentioned by Mr. A. K. Howell in his presidential address to the Manchester Juniors. Nationalisation, he pointed out, offers the possibility of a wider training than was possible under the old regime. It should be possible for a junior to move round the various undertakings in his area and spend enough time at each to gain experience of various plant, processes, and equipment, as well as to learn and appreciate the different viewpoints of respective staffs. There has always been

a difference in outlook between staffs on large and small works, and each has had little or no knowledge of the other, but the facilities envisaged by Mr. Howell and favoured by most chief officers would break down barriers of that kind. With a widening of the horizon early specialisation should be avoided, for without trial neither the junior entrant nor his employers can know for what he is best suited. There is much to be said for Mr. Howell's suggestion that staffs of large and small undertakings should be interchanged, provided it does not involve travel and removal difficulties of such gravity as to disturb the very sense of security which the industry should encourage.

Personal

Mr. J. E. Cooper, Manager of the Research and Development Department of Thomas De La Rue and Co., Ltd. (Gas Group), has been appointed by the East Midlands Gas Board as Technical Assistant to the Board's Commercial Manager, Mr. H. R. Hart, as from January 1, 1953.

◇ ◇ ◇

Mr. W. G. Phillips, Commercial Manager, Watford Division Eastern Gas Board, has been awarded by the organisers of the Public Works and Municipal Services Congress a prize of £20 for his paper entitled 'The Gas Industry's Contribution to the Fuel Services of the New Towns,' presented at the Session held today under the auspices of the Institution of Gas Engineers.

◇ ◇ ◇

Mr. J. F. Willsher, formerly Production Controller, George Kent, Ltd., has been appointed Production Manager, responsible for both material control and production control. This appointment follows the recent death of Mr. H. W. Cain, Material Controller.

Mr. J. F. Willsher.

Mr. Ivor Preece.

Mr. Ivor Preece, of George Wilson Gas Meters, Ltd., has been appointed fixture secretary of the Coventry Football Club, in addition to which he has also been appointed as that club's representative on the Warwickshire Rugby Football Union, where the gas industry is strongly represented, **Mr. J. L. Anstey,** of Parkinson and Cowan, Ltd., being the President and **Mr. W. D. Wilson,** Managing Director of George Wilson Gas Meters, Ltd., being a Vice-President.

◇ ◇ ◇

Mr. J. H. Hambro, C.M.G., **Sir Geoffrey Heyworth** and **Mr. Gavin Martin** have been re-appointed as part-time members of the National Coal Board. The Minister has also appointed **Alderman W. Bayliss,** C.B.E., J.P., to be a part-time member of the Board, in place of **Alderman Sydney Jones,** whose term of part-time membership of the Board has now expired. These appointments are for three years. The other members of the Board (all of whom hold full-time appointments) are Sir Hubert Houldsworth (Chairman), Mr. W. J. Drummond and Sir Eric Coates (Deputy Chairmen), Sir Andrew Bryan, Mr. Ebby Edwards, Sir Charles Ellis, and Sir Godfrey Vickers. Sir Geoffrey Heyworth has been Chairman of Lever Bros. and Unilever, Ltd., since 1942. He is also Chairman of the Court of Governors of the Administrative Staff College. He served as Chairman of the Committee of Enquiry into the Gas Industry, which was set up in 1934. He was knighted in 1948.

Mr. Andrew Hardie, Chief Inspector of the Public Lighting Department at Halifax, has been promoted to the position of Lighting Superintendent.

◇ ◇ ◇

Mr. I. M. O. Hutchison, Sales Director of the Balfour group of companies, has returned from an eight-week business tour of South Africa. He visited Johannesburg, Durban, Port Elizabeth, Cape Town, Lourenço Marques, and Nairobi. On his return he reported that the prospects in these territories for the group's engineering products were encouraging, and steps are already being taken to appoint agents in South Africa.

◇ ◇ ◇

Mr. R. F. D. Pawley, formerly Engineer, has been appointed Manager of the Berwick undertaking of the Northern Gas Board with effect from October 1. This appointment follows the retirement of Mr. I. M. Hardacre after a period of ill health. Mr. Pawley was trained under the late Mr. F. Blackburn, formerly General Manager and Chief Engineer to the Plymouth Gas Department, and was appointed Engineer to the Berwick undertaking in November, 1949. He is an associate member of the Institution of Gas Engineers and an associate member of the Institute of Fuel.

◇ ◇ ◇

Mr. Thomas Cameron, Deputy Manager, Galashiels subgroup, Scottish Gas Board, has been presented by the Scottish Gas Board with an inscribed gold watch as a mark of appreciation of gallantry. The presentation was made by Sir Andrew Clow, Chairman of the Board, at a meeting in Edinburgh, when he and members of the Board took the opportunity of expressing their appreciation of the gallantry of Mr. Cameron, who had, at great personal risk, plunged into a gasholder tank at Galashiels in an effort to save the life of a workman who had fallen into the tank. Mr. Cameron joined the Edinburgh gas undertaking in 1937 as an apprentice gas engineer after his education at the Royal High School. In 1941 he volunteered for service in the Royal Navy, in which he saw service in home and foreign waters, rising to the rank of Sub-Lieutenant (E), R.N.V.R. On demobilisation in 1946 he re-joined the Edinburgh undertaking and in 1950 took up his present appointment with the Galashiels sub-group of the Scottish Gas Board. Mr. Cameron is a member of the Institution of Gas Engineers and the Institution of Mechanical Engineers. He is President of the Scottish Junior Gas Association (Eastern District).

1952 'Journal' Directory

PREPARATIONS are well under way for the 1953 edition of the *Gas Journal Calendar and Directory,* to be published at the end of this month. The *Directory* has again been completely revised and notes all the changes which have been recorded month by month in the *Journal.* In order that readers may continue to keep their copies of the 1952 issue up to date in the few remaining weeks before the 1953 *Directory* makes its appearance the following alterations notified during October should be noted (together with the appropriate adjustments relating thereto in the 'Personnel' section, pp. 137-152):

Page 31.—LONG EATON and ILKESTON: M. E. Frost, *Dist.M.*, Long Eaton, becomes *Dist.M.*, Long Eaton and Ilkeston. Delete J. A. Derbyshire, *Dist.M.*, Ilkeston (removed).

„ 75.—SUNDERLAND: Delete F. P. Fall, *Ch.E.* (retired).

„ 115.—WEST MIDLANDS: Delete T. F. E. Rhead, *Scientific Adviser* (retired); insert E. T. Pickering, *Area Chief Chemist.*

„ 119.—LEAMINGTON: A. D. Duxbury, *E and M,* vice D. K. Green (removed).

„ 131.—LANARKSHIRE: Delete F. R. Mitchell, *Group Manager* (deceased).

„ 161.—BANGOR (Co. Down): J. A. Derbyshire, *E and M,* vice W. Scotland.

„ 182.—SOUTH WESTERN SECTION: *Chairman,* J. W. Denton, G.M. (Torquay); *Senior Vice-Chairman,* C. R. Ingham (Bristol); *Junior Vice-Chairman,* W. B. Claridge (Swindon).

„ 183.—SCOTTISH ASSOCIATION: *President:* R. Cowie (Hawick); *Senior Vice-President:* A. W. Brown (Aberdeen); *Junior Vice-President:* J. Ford (Inverness).

„ 186.—INSTITUTION OF CHEMICAL ENGINEERS: Professor M. B. Donald, *Hon. Secretary,* vice L. O. Newton (deceased).

Diary

Nov. 7.—Scottish Juniors (Western): 'Contracting for the Gas Industry,' R. Dutnall, Royal Technical College, Glasgow.

Nov. 7.—London Juniors: 'Gas and Coke Manufacture at Villeneuve-la-Garrene,' P. C. Savage, B.SC., Assistant Engineer, Beckton Works, North Thames Gas Board, 178, Edgware Road, W.2. 6.30 p.m.

Nov. 8.—London Juniors: Visit to Southall station of the North Thames Gas Board. 2.15 p.m.

Nov. 8.—Scottish Juniors (Eastern): Afternoon visit to Dixons Ironworks, Glasgow.

Nov. 8.—Yorkshire Juniors: 'Planning for Better Sales and Service,' W. J. Steed, Divisional Sales and Service Manager, Sheffield, at Co-operative Society Emporium, Doncaster, 2.30 p.m.

Nov. 11.—Midland Juniors: 'Industrial Pyrometry' by H. J. Smith (Industrial Pyrometers, Ltd., Birmingham). Staff Mess Room, Birmingham.

Nov. 11.—Wales and Monmouth Juniors: 'The Administration and Development of a Small Undertaking,' W. E. Whitney. Wyndham Hotel, Bridgend. 2.15 p.m.

Nov. 12.—Manchester Juniors: Visit to collieries in Astley Green District by invitation of N.C.B.

Nov. 12.—Western Juniors.—Visit to Works of Tecalemit, Ltd., Plymouth. 'Lubrication,' D. R. Pryce (Tecalemit, Ltd., technical staff).

Nov. 12.—Institute of Fuel. North West Section: 'Some Aspects of Feedwater Conditioning for Steam Boilers,' C. W. Drane, B.SC., F.R.I.C., A.M.INST.F., Engineers' Club, Albert Square, Manchester, 6.30 p.m.

Nov. 13.—Eastern Section, I.G.E.: 'Some Aspects of the I.G.U. Conference in Brussels, 1952,' W. A. Evetts (Watford), D. B. Parkinson (London), and D. W. Ault (Lincoln). 17, Grosvenor Crescent, S.W.1.

Nov. 13.—Institution of Heating and Ventilating Engineers (Liverpool and District Branch): 'Automatic Controls,' F. M. H. Taylor, PH.D. Radiant House, Bold Street, Liverpool. 6.30 p.m.

Nov. 14.—Manchester and District Section, I.G.E.: 'Town Gas Interchangeability and the Flame Hardening and Tempering of Wire,' A. R. Wilson, B.SC., Industrial Department, North Eastern Gas Board; at George Hotel, Huddersfield, 2.30 p.m.

Nov. 17.—Eastern G.C.C.: Connaught Rooms, Kingsway, W.C.2. 2 p.m.

Nov. 18.—Scottish Juniors (Western): Evening Visit: Burroughs Adding Machine Co., Dumbarton.

Nov. 18.—London and Southern Section, I.G.E.: 'Steam and Power in the Gas Industry.' L. J. Clark (North Thames Gas Board). Re-presentation of his paper to the 5th International Gas Union Conference in Brussels. 17, Grosvenor Crescent, S.W.1. 2.40 p.m.

Nov. 20.—Midland Juniors: Half-day visit to Boulton-Paul Aircraft, Ltd., Wolverhampton.

Nov. 20-22.—Poultry Show: Olympia. Gas Council exhibit and cookery demonstrations.

Nov. 21.—London Juniors: 'Town Gas High Temperature Radiant Heating in Industry,' F. W. Lockwood (North Thames Gas Board), 178-180, Edgware Road, W.2, 6.30 p.m.

Nov. 21.—North of England Section, I.G.E., and Northern Juniors: Joint meeting; 'Steam and Power in the Gas Industry,' L. J. Clark (North Thames Gas Board); King's Head Hotel, Darlington, 2.30 p.m.

Nov. 24-28.—Brewing Trades' Exhibition, Olympia. Gas Council Exhibit, stand 4/F.

Nov. 25-26.—Institution of Gas Engineers: 18th Autumn Research Meeting, Church House, Westminster, S.W.1.

Nov. 27.—North Thames G.C.C.: Westminster City Hall, Charing Cross Road, W.C.2. 2.30 p.m.

Dec. 1.—West Midlands G.C.C.: Queen's Hotel, Birmingham, 2.30 p.m.

Dec. 2.—South Eastern G.C.C.: Caxton Hall, Westminster, 10.30 a.m., followed at 2.30 p.m. by combined meeting of Consultative Council and District Committees.

Dec. 3.—Southern G.C.C.: Grand Hotel, Bournemouth.

INSTITUTION OF GAS ENGINEERS

THE 18th autumn research meeting of the Institution of Gas Engineers will be held at Church House, Westminster on November 25 and 26. The following programme has been arranged:—

November 25

10 a.m.—Opening. Presentation and discussion of the 13th report of the Chairmen's Technical Committee. (*Comm.* 413.)

10.30 a.m.—Presentation and discussion of the 29th report of the Gas Education Committee. (*Comm.* 414.)

11.10 a.m.—Presentation of Diplomas.

11.15 a.m. to 12.15 p.m.—Presentation and discussion of paper 'Application of the Gas Turbine for Recovery of Waste Heat,' by Capt. (E.) W. Gregson, R.N.R., M.SC.(ENG.), M.I.C.E., M.I.MECH.E. (*Comm.* 415.)

3 p.m.—Presentation and discussion of paper, 'Manufacture of Butane-enriched Blue Water Gas in Small Undertakings,' by E. Johnson, B.SC., PH.D., ASSOC.INST.GAS E., A.R.I.C., Chemical Engineering Assistant, North Eastern Gas Board. (*Comm.* 416.)

4 to 5 p.m.—Presentation and discussion of paper, 'Effect of Load Variation on Costs,' by J. Burns, G.M., B.SC., PH.D. (Chief Engineer), and L. J. Clark, B.E.M., M.SC.(ENG.), M.I.MECH.E. (Deputy Station Engineer, Beckton), North Thames Gas Board. (*Comm.* 417.)

November 26

10 a.m.—Presentation, without discussion, of paper, 'The Gasification Programme of the Birmingham Research Station,' by F. J. Dent, D.SC., PH.D., Director of Research, Birmingham Research Station. (*Gas Council Research Comm. GC* 1.)

10.20 a.m.—Presentation and discussion of report, 'Thermal Efficiency in Gas Production and Utilisation,' by J. E. Davis, F.R.I.C., Chief Technical Officer, South Eastern Gas Board. (*Gas Council Research Comm. GC* 2.)

11 a.m.—Presentation and discussion of report, 'Influence of Preheating the Air and Steam Supplies on the Performance of a Blue Water Gas Plant,' by G. Percival, B.E.M., Birmingham Research Station. (*Gas Council Research Comm. GC* 3.)

11.45 a.m. to 12.30 p.m.—Presentation and discussion of report, 'Some Effects of Traces of Iron Carbonyl in Town Gas,' by W. J. Gooderham, B.SC., A.R.C.S., F.R.I.C., and F. E. Mills, B.SC., A.M.I.CHEM.E., London Research Station. (*Gas Council Research Comm. GC* 4.)

2.30 p.m.—Presentation and discussion of report, 'Sampling and Quality Control,' by E. H. M. Badger, B.A., F.R.I.C., London Research Station. (*Gas Council Research Comm. GC* 5.)

3.30 p.m.—Presentation and discussion of 43rd report of the Joint Refractories Committee: 1951-52. (*Gas Council Research Comm. GC* 6.)

4.15 p.m.—Presentation and discussion of report, 'Performance of Oxide Purifiers,' by L. A. Moignard, M.A., D.PHIL., F.R.I.C., Birmingham Research Station. (*Gas Council Research Comm. GC* 7.)

Gas and Electricity Sales Trends

FROM time to time the North Western Gas Board publishes, under the title *Focus*, factual surveys of topics which have a bearing on the gas industry. The publication is intended primarily for the information of the Board's own employees, but certainly No. 3 of the series has interest and implications extending far beyond the Board's area. It gives a very carefully prepared analysis of gas and electricity sales in the North West in the period 1921-1950.

In the North West, during the 29 years since 1921, while gas sales were approximately doubled, electricity sales increased about six times faster, to over 13 times the level of 1921.

1921 - 1939

With the exception of the years 1929-31 and 1937-38 when employment was falling, electricity sales increased without interruption from 1921-1939. Annual rates of increase averaged 15% up to 1929 and 11% from 1931-37. In the first of these two periods of expansion, electricity sales were trebled and in the second, nearly doubled. By 1939 sales had reached six times the level of 1921.

Over the same period gas sales rose from 34,200 to 40,100 mill. cu.ft. —an increase of some 6,000 mill. or less than one-fifth of sales in 1921. From 1926 onwards, gas sales were virtually static, fluctuating around 40,000 to 41,000 mill. cu.ft. per annum.

Between 1938 and 1950 electricity sales in the North West increased from 2,200 to 5,300 mill. units, or about 2½ times the level of 1938. Gas sales rose from 40,600 to 70,100 mill. cu.ft. (189.2 to 320.4 mill. therms) or about 1¾ times the level of 1938.

1939 - 1945

During the war years, electricity sales increased very rapidly, in response to rising industrial demand, and between 1939 and 1942 the increase averaged about 15% per annum. Subsequently, the rate of increase was gradually reduced and between 1944 and 1945 the curtailment of industrial activity in the period of re-conversion led to a fall in electricity sales.

Gas sales also increased rapidly throughout the war period, once the initial effects of reduced demand for public lighting had been offset by growing requirements for heating, due to the shortage of domestic coal and the rise in employment and earnings. Between 1940 and 1945 sales increased at an average rate of about 6% per annum, or about 30% faster than in any pre-war years, although still far below the rate of increase in electricity.

In contrast to the 1930's, the difference in the respective rates of increase, as between gas and electricity, was almost entirely due to the rapid rise of industrial demand for electricity and hardly at all to rivalry in the domestic field. Between 1939 and 1944, domestic sales of electricity in Great Britain increased by only 31%, while industrial sales increased by 73% and total sales by 46%.

1945 - 1950

In the post-war period, 1945-50, electricity sales in the North West again increased more rapidly than sales of gas, the annual average rates being 5.7% (4.5% from 1946 onwards) for gas and 8.0% for electricity. To some extent this difference was due to renewed expansion of industrial demand for power in the period of recovery and full employment. But electricity sales to domestic consumers were now once more increasing faster than any other principal category. The increase in Great Britain between 1945 and 1950 was 67%, as against 33% for industrial and 46% for total sales.

Domestic Sales

The main impact of competition between gas and electricity in the inter-war period was in the domestic field, and among the main categories of electricity sales it was the sale to domestic consumers which showed by far the most rapid increase.

Domestic sales of current in Great Britain increased to 18 times the level of 1920, while industrial sales, and the remainder of non-domestic sales each increased to only about 4 to 5 times their earlier level. The proportion of domestic to total sales of electricity rose from 8% in 1920 to 26% in 1938.

General Trend

The general trend indicates that domestic sales of electricity have been rising rapidly, and are now approaching double the level of 1945, while domestic sales of gas increased in the immediate post-war period (from 33,400 mill. cu.ft. in 1945 to 40,400 mill. cu.ft. in 1947) but have since remained approximately static, with a slight tendency towards decline.

It seems, therefore, that in this field, where rivalry with electricity is strongest, gas is once again losing ground. The fact that total sales of gas have nevertheless been rising is due to the advance of industrial sales, sales to commercial and government premises, and sales for public lighting, all of which have increased by more than 50% since 1945.

The proportion of domestic to total sales of gas has dropped in the North West from 63% in 1945 to 55% in 1950, while the corresponding proportion for electricity has risen from 26% to 30%.

LE BAS PRESENTATIONS

A DINNER to 150 members and guests of the London staff of Le Bas Tube Co., Ltd., on October 22 was the occasion for the presentation of 28 suitably inscribed Swiss watches and one clock to 29 of those who have served for more than 25 years with the company. These included one female and 18 male employees from the Cyclops works at Millwall, two female and three male staff from Head Office, two outside representatives (Mr. F. H. Blake and Mr. R. M. Osborne), two from the management (Mr. E. Armstrong and Mr. W. A. Johnston), and one director (Mr. H. R. Hiscott).

Mr. Paul Bucher, Chairman of Le Bas Tube Co., Ltd. (left), makes a presentation to Mr. H. R. Hiscott (a director of the company).

The longest service palms were held by Mr. H. G. T. Adams, of Millwall works (49 years), and Mr. F. H. Blake, representative for S.W. London (48½ years).

The presentations were made by the Chairman, Mr. Paul Bucher, who has himself been associated with the company for the past 19 years. In his speech he paid tribute to the loyal service of the veterans of the firm and to the happy and co-operative spirit pervading the whole Le Bas organisation.

Also present at the ceremony as guests were Mr. W. Eastwood and Mr. F. W. Wakefield, who up to their retirement from the company had served 52½ and 26½ years' respectively.

£250 Mill. Spent on Post-War Roads

British Road Tar Association's Contribution

THE 25th annual general meeting of the British Road Tar Association was held in London on October 21, when Mr. Stanley Robinson, Chairman of the Midland Tar Distillers, Ltd., was elected President for a second year. In the evening well over 200 members and distinguished visitors, including several from France, attended the annual dinner at the May Fair Hotel under Mr. Stanley Robinson's Presidency. The gas industry was well represented by Colonel H. C. Smith, Chairman of the Gas Council, Chairmen and Deputy Chairmen of several area boards, Mr. G. E. Currier, President of the Institution of Gas Engineers, and many gas engineers.

Mr. LESLIE O'CONNOR, C.B.E., Vice-President, proposing the toast of the guests extended a special welcome to the French visitors. He also mentioned representatives of the Ministry of Fuel and Power in the persons of Mr. R. Kelf-Cohen, Under Secretary, Coal Division, and Mr. K. L. Stock, Under Secretary, Gas Division, Colonel H. C. Smith, and Mr. G. E. Currier, President of the Institution of Gas Engineers. He coupled with the toast the name of Mr. E. B. Hugh-Jones, Chief Engineer of the Highways Department of the Ministry of Transport, an old and valued friend of the Association. The interests of British road tar received fair treatment in his capable hands.

Mr. E. B. HUGH-JONES, M.C., Chief Engineer, Highways Department, Ministry of Transport, responding for the guests, said highway engineers had good reason to be grateful to the British Road Tar Association for the marked improvement in the reliability of road tar, especially in the last five or six years, under the direction of Mr. J. Davidson Pratt. When it came to building roads with tar the world looked to this country to learn the best and the latest practice.

When Tar was 1d. per Gal.

It was only about 50 years since tar was given away at 1d. per gal. and was best known to the public for the part it played in bonfires on Guy Fawkes Night and for its affinity for feathers. Now, over 80 mill. gal. of carefully processed tar were used on the roads with meticulous care. They did about 1,000 miles of surface dressing every year on the trunk roads alone, and would do more if they had the money. This country had since the end of the war added over 1,000 miles of new roads to the highway system. This meant we had spent over £250 mill. on building these roads, and we were still building them. They were still being built at the rate of some 600 to 700 miles a year.

Mr. G. E. CURRIER, O.B.E., President of the Institution of Gas Engineers, proposed the toast of the Association. He said the Association had expanded in 25 years from small beginnings to an organisation embracing all sections of the tar producing and processing industries, and with well established contacts with central and local government officers, highway authorities, and road building contractors throughout the kingdom.

There had been a noticeable trend towards the use of the flexible form of road construction in place of the rigid concrete type which had been so popular. There could be no doubt that the activities of the British Road Tar Association had contributed materially to that change. To the coal tar industry the work of the British Road Tar Association must become of increasing importance. As the new oil refineries came into production competition from other forms of road surfacing would become keener.

Dense Tar Surfacings

The use of dense tar surfacings on granite setts and on roads with discontinued tram routes had developed considerably in the last few years. From his own observations he could say that the dense tar surfacings could provide an excellent covering, and, he understood, at a cheaper cost than the competitive materials. Road surveyors had not unlimited funds available for road construction and maintenance. They did remarkably well to maintain the road surfaces as well as they did in these days of expenditure restrictions. The safe hard wearing qualities of tarred roads were well known but more and more research was necessary, and it was up to all interested parties to give the B.R.T.A. their full support. There was a dire need for more roads with dual carriageways over their whole length, with by-passes for towns and villages. We needed a road from north to south which was A.1 in fact and not merely in name.

He pleaded for more stringent control of the lights used by motor vehicles. It should not be beyond our scientists to devise a system of lighting for motor vehicles which, while being adequate, would give a minimum amount of glare for the discomfort of oncoming traffic. The present position was most unsatisfactory; many vehicles with blinding headlights could only be described as a menace on the roads. Indeed, many drivers were having to buy spectacles with special lenses to absorb glare. An increasing number of people had to wear spectacles in any case, no doubt due to the declining use of gas lighting, and it was to say the least inconvenient to have to use an additional pair of spectacles for night driving.

In submitting the toast he wished the Association continued progress and success, and with the Association he included Mr. W. E. Cone, Technical Adviser, and Mr. D. M. MacCormack, Secretary.

The PRESIDENT, responding to the toast, said his father was a very active founder-member of the Association, and he well remembered the early days when he and others got the idea of the B.R.T.A. over to the industry. His father was never President because in those days the rules of the Association prevented a distiller from holding that office. The rules, however, had been changed last year when, to his surprise, he was honoured by being elected President—the first 'pure' tar distiller to be so honoured. The object of the Association was to see that nothing but tar—and the best tar—was used on the roads, no matter in what form it was used. It followed that research and the turning of the results of research into actual practice was the keystone of its work. It collaborated with such bodies as the Federation of Coated Macadam Industries and the Association of Road Surface Dressing Contractors, to both of whom they were greatly indebted. They were indebted, too, to the various Ministries, and finally to many road surveyors and engineers. Being divorced from politics and (after collecting its income on a subscription basis) having nothing to do on the commercial side, the Association's officers could go, and were in fact welcome, everywhere, wherever progressive road making was practised because they had something to contribute from the fund of knowledge acquired over many years.

Next Year's I.R.T.C.

Mr. J. DAVIDSON PRATT, C.B.E., Chairman, referring to what was happening in Western European collaboration, spoke of plans for the next meeting of the International Road Tar Conference. The present idea was that about the third week in September of next year they should have the conference in England.

Finally, M. J. PARMENTIER, Inspecteur General des Ponts et Chaussees; Vice-President du Conseil General des Ponts et Chaussees, at the invitation of the President, expressed in French the greetings of Continental members of the International Road Tar Conference and paid tribute to the progressive work of the British Road Tar Association, and particularly its research activities.

The Gas Industry will again be well represented at the Ideal Home Exhibition at Olympia next March. The Gas Council will have a feature exhibit in the household services section in the Grand Hall. Among the gas exhibitors who have already booked space in this section are: Ascot Gas Water Heaters, Ltd.; Bratt Colbran, Ltd.; Electrolux, Ltd.; Parkinson Stove Co., Ltd.; Radiation Ltd.; R. & A. Main, Ltd.; General Gas Appliances, Ltd.; and Stoves, Ltd. (Liverpool). Among the earliest exhibitors in the domestic labour saving section are Burco, Ltd. (Burnley).

NATIONAL FIRST AID COMPETITION

THE National First Aid Competition in the gas industry was held at Conway Hall, W.C.1, on October 22. Teams, chosen by eliminating contests in their own areas, represented all the Boards except the Scottish and the South Western.

The result was:

1. South Eastern Gas Board (334½ marks).

2. North Western Gas Board (320 marks) represented by the Liverpool team which won the first of the series last year.

3. North Thames Gas Board (300½ marks) represented by the Fulham Station team.

The team test consisted of giving in 15 minutes first aid to a victim of a factory explosion. The man was pinned under a heavy beam and had suffered extensive injuries.

A special trophy was presented to the winning team, and plaques of silver gilt, electroplate and bronze were awarded to the first, second and third team members respectively. The presentations were made by Colonel H. C. Smith, C.B.E., D.L., Chairman of the Gas Council. The prizes were given by the St. John Ambulance Association.

The winning team will represent the gas industry at a competition at the Central Hall, Westminster, on November 18 for the Grand Prior's Trophy. They will meet teams from the police, railways, post office, Ministry of Supply, electricity industry, transport, Coal Board, St. John Ambulance, and fire brigade.

The winning South Eastern Gas Board team receiving the challenge trophy from Colonel H. C. Smith. The team consisted of R. S. North (captain), W. Morley, S. Norris, H. Ransley, and W. Keogh (reserve).

Board Not Overstaffed

AT a meeting of the North Western Gas Consultative Council at Blackpool, on October 9, Mr. D. P. Welman, Chairman of the Area Board, denied that the Board was overstaffed with highly paid officals.

In the North West, he said, they had to work under strenuous conditions and he felt they had asked many of their service staff to carry too heavy a load. The industry was not overstaffed. Its purpose was to sell gas at the cheapest possible rate, and, consistent with good service, the rate could not be brought too low.

The industry, however, was faced with rising prices, apart from an extra charge of £250,000 for workers' wages. Enormous economies had been made and efficiency increased. The aim was to go still further. If they had to meet considerable increases for coal, wages and other essentials over which they had no direct control, then they must pass it on.

'Autumn Fair'

A HIGHLY successful four day 'Autumn Fair' Exhibition was held recently in the Whitehaven unit of the Western group of the Northern Gas Board. The opening ceremony, under the Chairmanship of Mr. A. R. Croft, Group General Manager, was performed by the Mayor of Whitehaven, supported by members of the Board and the Group Engineer.

A section which created especial interest, and was the focal point for organised parties of schoolchildren, was that dealing with the possibilities of the use of methane from local sources.

Various novel demonstration features were incorporated which succeeded in drawing 'capacity houses.' The Hallowe'en Party, in particular, designed principally for mixed youth clubs, was attended by young people and parents.

Excellent Press publicity accrued as the result of this event, as well as a B.B.C. report in the North of England Home Service after the 6 o'clock News.

News in Brief

Bangor (Co. Down) Gas Department has placed an order with Kirkham, Hulett, and Chandler, Ltd., of Mansfield, Notts, for new purifier extensions which will consist of two further boxes 20 ft. by 33 ft. by 6 ft.

W. Edwards and Co. (London) Ltd., announce the opening of a new establishment at 44, West George Street, Glasgow, where they now have facilities for technical sales and service to meet the growing interest in high vacuum applications in Scotland. It is intended to have a selected range of equipment available for customers' inspection and it is hoped that Scottish friends will be able to take full advantage of this service.

Imperial Chemical Industries, Ltd., have announced that boreholes are to be sunk in search of natural gas on a farm at Eskdale, in North Yorkshire. If gases are found in sufficient quantities they will be sent by pipeline to the I.C.I. factories on Tees-side. The operations are to be carried out in an area licensed some years ago by the D'Arcy Exploration Co., Ltd., in a search for petroleum and natural gas. If gas is found in worthwhile quantities it will be bought by the I.C.I. from the D'Arcy Co.

A Fine of £20 was imposed on the Scottish Gas Board for allowing poisonous liquid to escape into the Teviot at Hawick with resultant loss of fish life. The Sub Group and District Manager (Mr. R. Cowie) pleaded guilty. An agent for the Board said that the liquid was normally run into a well at the rear of the gasworks and allowed to filter into the subsoil. The Board now intended to build a large open tank. The incident had arisen during the laying of a new pipe across the River Teviot when the fluid burst through the banks into the river.

Following the Decision by Sunderland and Blyth Town Councils to give the tenants of their new housing estates freedom of choice between gas and electricity for cooking on new estates, the Wigton (Cumberland) R.D.C. has decided to recommend the North-Eastern Housing Association, Ltd., to authorise the laying of gas services for all houses already erected or to be erected on the Western Bank estate. In the case of the first 96 houses, of which approximately half are occupied and the remainder are in course of erection, it was decided that it be left to the tenants to provide their own gas apparatus if desired. As regards the remainder of the estate to be developed in the future, it is possible that the Association will be asked to provide gas cookers instead of electric cookers in houses where coal-burning ranges are installed at the present time.

G.C.D.S.

THE GAS COUNCIL DRAMATIC SOCIETY will present on Tuesday and Wednesday, December 9 and 10, performances of 'Candied Peel' at the Rudolph Steiner Hall, 33, Park Road, London, N.W.1.

Seats are obtainable from Mrs. B. A. Rowe, 1, Grosvenor Place, S.W.1, at 7s. 6d., 5s., 3s. 6d., and 2s. 6d.

WOMEN'S GAS FEDERATION

Birmingham Branch Annual Meeting

BECAUSE of shortage of steel, the West Midlands Gas Board cannot provide all the gas that is required in the area, Alderman W. H. Malcolm (Chairman of the West Midlands Gas Consultative Council) told the annual meeting in Birmingham of the Birmingham District Women's Gas Circle.

They got only about half the allocation of steel they should have, he said, and they could sell about 8 mill. cu.ft. a day more gas if they had the plant. It was lamentable in a great industrial area like the Midlands. The Ministry was well aware of the situation.

The view that family life was the most important factor in the social structure was expressed by Dame Vera Laughton Mathews, Adviser on Women's Affairs to the Gas Council. So many parents slaved all their lives, she said, to give their children the good things that money could buy. They cooked and worked hard, but these were not the important things that parents should give their children. They needed good ideas and true standards.

Ormskirk Membership Trophy

THE silver rose bowl, won by the Ormskirk Branch of the Federation for the highest percentage increase in membership in the past year, was presented on October 14 to their chairman, Mrs. C. Throp, by Miss O. L. Humphries, National Chairman of the Federation.

Accepting the trophy, Mrs. Throp thanked all the members who had worked so hard to achieve this very fine result and mentioned that one member (Mrs. Carr, Treasurer) had 40 new members to her credit. 'This is a very happy day for me,' said Mrs. Throp, 'and I am proud to be Chairman of the Ormskirk Women's Gas Federation.'

Addressing the members, Mr. C. H. Leach (General Manager, Liverpool Group, North Western Gas Board) apologised for the absence of Mr. D. P. Welman, Chairman of the Board, and his deputy, Mr. A. Henshall. As Group General Manager, he said, nobody took a greater interest in the affairs of the Women's Gas Federation.

Worthing Homecraft Show

TO stimulate interest in the Annual Homecraft Show, Mrs. M. Ayliffe, Chairman of the Worthing Branch, this year presented a cup which is to be competed for annually and becomes the property of any competitor who holds it for three consecutive years. It goes to the member who gains most awards.

At the end of this year's show, held at the Gas Showrooms in October, it was presented by Mrs. Ayliffe to Mrs. M. James, who had won three first prizes—for jam, for a Madeira cake, and for a Victoria sandwich. The show attracted 120 entries.

Mrs. Ayliffe told members that they had done very well, but that she was still not satisfied. They could do a great deal more, and she wanted next year's show to be the best in the Federation.

Gas Exhibition at Stornoway

THE first gas exhibition on the Isle of Lewis was opened at Stornoway on October 21. The Calor Gas Company was associated with the Scottish Gas Board in showing a wide range of domestic and commercial appliances.

Mr. H. S. Milne, Controller of the Northern Division, Scottish Gas Board, said the reason they delayed so long in bringing an exhibition to Stornoway was that before showing the latest gas appliances they wanted to be sure that they could give a really satisfactory service. They were now approaching the stage where that could be given, and Stornoway would have a service comparable with any town of its size.

Declaring the exhibition open, Coun. Donald Stewart said the modernisation of the Stornoway gas plant by the Stornoway Trustees had now been completed by the Gas Board at a cost of approximately £20,000. It gave him personal pleasure to add that the Scottish Gas Board was autonomous and free from London control. He thanked the Scottish Gas Board for the very sympathetic consideration it had given to the problems in Stornoway and the local manager for the efficient and courteous service the community was now getting.

Mr. R. H. Bone, Commercial and Sales Officer to the Board, said it was largely due to the foresight of the Stornoway Trustees that the new plant and the additional work which has been done here was possible. The Scottish Gas Board, like the local authorities, had one aim and purpose—to serve the public.

Chemicals from Tar

THE SCOTTISH JUNIOR GAS ASSOCIATION (Western District) on October 10 visited the Provan chemical works of the Scottish Gas Board, Glasgow.

Members were received by Mr. D. Baird, Production Manager, who welcomed them on behalf of the Board. Following a tour of inspection of the works the visitors were entertained at tea in the canteen, when Mr. R. Currie, President, conveyed the thanks and appreciation of the Association to Mr. Armour, Works Manager, and to the technical staff, and canteen staff.

Gas Appliance Lectures.—By arrangement with the West Midlands Gas Board, Walsall and District division, lectures on the principles of Sugg 'Halcyon' assisted convection space heaters and gas-fired incinerators were recently given by Mr. B. Raymond Sugg, B.SC.(ENG.), A.C.G.I., of William Sugg & Co., Ltd., to the fitting staff at Smethwick and Walsall. Mr. Sugg was accompanied by Mr. G. C. Gould, Sales Manager.

Plans for Using Methane Gas from the Haig Pit, Whitehaven, for domestic and industrial purposes, were referred to by Mr. A. R. Croft, Group General Manager of the Northern Gas Board, opening the Board's autumn fair at Whitehaven. The gas is being drained from the Haig Pit workings mainly as a safety measure on the part of the National Coal Board.

INSIGNIA AWARDS

THE City and Guilds of London Institute has, through its Department of Technology, hitherto discharged the duty laid upon it by Royal Charter to promote the advancement of technical education as an aid to industry through the medium of its certificates and awards at three levels. These are the well-known Intermediate, Final, and Full Technological Certificates respectively.

The Institute considers that in certain branches of industry the time has now arrived when additional encouragement and recognition could usefully be given at a higher level than that represented by its Full Technological Certificates to those engaged in industry who continue to pursue their studies and to broaden their knowledge. In furtherance of this objective the Institute proposes to establish under its Royal Charter an Insignia Award in Technology which will lay emphasis upon technical training based primarily upon practical experience, supplemented by theoretical study, as distinct from the more academic approach to training for which many educational facilities and inducements already exist. This new award is intended to be a mark of distinction for those who have combined with a sound practical training an adequate knowledge of the fundamental scientific principles of their industry, and who possess a capacity for leadership and administration.

The institution of this award has two further objects. In the first place, it will encourage those who have completed a course of training in some branch of industry to extend their studies to its broader problems, and to widen their knowledge of the scientific principles upon which their industry is based. In this way they will become better able to apply new methods to their work and to know when to seek the assistance of those with more advanced and specialised knowledge.

The Institute also believes that the introduction of the award will encourage students to take full advantage of the facilities provided in industry and technical colleges and will lead to the recognition of the value of practical training and experience as basic requirements.

The standard of the Insignia Award will be well above that of any existing Full Technological Certificate. The Institute intends to introduce the Award gradually in the main branches of the chemical, constructional, electrical, mechanical, and textile industries.

Copies of the general regulations governing the Insignia Award scheme, together with notes for the guidance of candidates, and an application form for the registration of candidates will be sent to any applicant on receipt of a stamped addressed foolscap envelope. Enquiries should be addressed to The Director, Department of Technology (I.A.), 31, Brechin Place, South Kensington, S.W.7.

Visit to New Midland Tar Distillery

Mr. J. E. Wakeford, Chairman, presents his predecessor, Mr. A. Tran, with a silver salver. Seated are Mr. Stanley Robinson and Mr. G. le B. Diamond.

THE Midland Section of the Institution of Gas Engineers visited the new works of the Midland Tar Distillers, Ltd., at Four Ashes, near Wolverhampton, on October 17, and spent an interesting afternoon inspecting the first phase of development covering a triangular piece of land comprising some 30 acres. Increasing activities at the company's Oldbury works had resulted in congestion with little room for further equipment, and it became imperative to seek another site because of a continuously increasing input of raw material and because the company had decided to undertake distillation of its own tar acids. Space required for this part of the project was considerable with the necessity to provide facilities to exploit a vigorous research and development plan.

Site of 100 Acres

The Four Ashes site extends over about 100 acres, of which only one-third is at present being developed. Steam will be provided by three John Thompson water tube boilers each with a maximum rating of 50,000 lb. of steam per hour at 500 p.s.i., fired with coal tar fuels. The steam plant is so laid out as to allow, if necessary, for the installation of chain grate stokers and ash handling equipment enabling the boilers to operate on solid fuel. Electric power will be provided either from a pass-out steam turbine or direct from the Midland Electricity Board system. Water for plant cooling systems is cooled in induced draught cooling towers of the filming type.

The offices, laboratory, and canteen are of single storey but are so constructed that another floor can be added if necessary. The central laboratory is planned to look after check tests in incoming raw materials and also to pass out sales products. Each plant battery will have its own small laboratory to look after hour-by-hour tests necessary to operate the equipment. A new research and development block houses the company's chemical and semi-technical research facilities.

The visitors were provided with copies of a flow diagram from which they were able to follow the various processes from the arrival of fraction oils from the primary distillation carried out at Oldbury to the loading of finished sales products—pyridine, lutidines, picolines, collidines, phenol, cresols, and xylenols, and other valuable commodities.

Some of the visitors looking round the new Four Ashes distillery of the Midland Tar Distillers, Ltd.

Before starting on their tour of the works the visitors were entertained at luncheon by the Directors of the Midland Tar Distillers, Ltd., presided over by Mr. Stanley Robinson, Chairman.

Mr. C. M. D. BELTON, who proposed the only toast—that of the Midland Tar Distillers, Ltd.—said he had for a number of years been associated with the Midland Tar Committee, of which he was Chairman for seven years. The Midland Tar Distillers originated from the Family Robinson. The Robinsons in past generations were pioneers in the gas industry, having been associated in the early days with the gas undertakings at Leamington, Coventry, and Leicester. In the course of time they saw there was more in tar than met the eye and they concentrated on endeavouring to extract whatever good might be derived from that by no means attractive looking product, with the result that they now had the Tar Family Robinson. They were people whom it was good to know, and the gas industry in the Midlands had been fortunate in having such capable, courteous, and efficient people with whom to make their co-operative arrangements which had been so successful for a number of years.

'Phenomenal' Enterprise

The enterprise which they were privileged to see that day was phenomenal, and the greatest possible credit was due to the company for having engaged a man who had a genius for getting things done and for getting the right men and the right materials—he referred to Mr. W. F. Dynes, the Works Engineer. In an enterprise of that kind a lot of money was required; in fact, the sterling figure involved in the undertaking ran into seven figures. The Midland Tar Distillers were no novices in dealing with finances. When it came to allocating prices for tar between the producers and the distillers under their co-operative scheme no mere approximation was good enough; their accountants would calculate the prices to nine places of decimals of pence per gallon. Besides being very capable and experienced chemists and engineers, the

Midland Tar Distillers were well acquainted with the intricacies of accountancy.

Mr. STANLEY ROBINSON, in a brief reply, said he was particularly pleased to welcome Mr. G. le B. Diamond, Chairman of the West Midlands Gas Board, and Mr. Sydney Smith and Mr. E. H. Harman, Chairman and Deputy Chairman of the East Midlands Gas Board. His company's relations with the gas industry had been of the pleasantest for a great number of years. Apart from any question of business their friendship was even greater than in the past, in spite of so-called political changes. They had been partners in the past and they looked forward to strengthening those ties in the future.

Mr. W. F. DYNES, Works Engineer, also responded to the toast and explained the processes which the visitors were to inspect.

Mr. J. E. WAKEFORD, Chairman of the Midland Section, made an appeal on behalf of the Benevolent Fund of the Institution of Gas Engineers, and a collection which was afterwards taken at the luncheon tables realised £21 7s. 6d., which, added to the amounts collected at previous meetings during the year, brought the total to nearly £62.

Presentation to Mr. A. Tran

Mr. WAKEFORD afterwards presented a silver salver to Mr. A. Tran in appreciation of his services as Chairman of the Section last year. The members greatly appreciated the enthusiastic way in which he had carried out his duties and they were proud to know that he had been elected a member of the Council of the Institution for the next three years.

Mr. TRAN expressed thanks for the presentation and praised Mr. Wakeford for the manner in which he had presided over the Section during the current year. He would be a difficult man to follow, but he was confident that Mr. Macnaughton would acquit himself well when he succeeded to the chair next year.

Among those supporting the Chairman were Mr. R. B. Robinson, Mr. Brendan Robinson, Mr. W. A. Robinson, Mr. M. M. Williams, Dr. Howard Butler, Mr. Hubert Bairstow, Mr. W. E. Aylwin, and Mr. Stanley Dixon, Director and Secretary. Apologies for absence were received from Mr. G. E. Currier (President of the Institution of Gas Engineers), Mr. H. F. H. Jones (Deputy Chairman of the Gas Council), Mr. A. W. Lee (Deputy Chairman of the West Midlands Gas Board), Dr. W. T. K. Braunholtz (Secretary of the Institution), and Mr. C. C. Wood (Junior Vice-Chairman of the Midland Section).

Manchester Juniors at Blackpool

Mr. D. P. Welman Stresses Importance of Juniors

TO wind up the long series of meetings of the organisations associated with the gas industry in the North Western area, the Manchester District Junior Association of Gas Engineers held its 54th annual meeting at the Winter Gardens, Blackpool, on Saturday afternoon, October 11.

Mr. L. G. Townsend, retiring President, was in the chair. He was supported by Mr. D. P. Welman (Chairman of the Area Board), Mr. A. K. Howell (incoming President), Mr. T. W. Pickthall (Hon. Secretary), Mr. A. Henshall (Deputy Chairman of the Board), Mr. H. Butters, Mr. Brown (President of the Yorkshire Association), Mr. J. Grayston (representing the Manchester District Section of the Institution of Gas Engineers) and others.

Mr. Welman said he did not think he needed to stress the importance the Board placed on the work of the Juniors. It was very material to the future of the industry. It was much more important than an association which just listened now and again to a paper, and then had an amusing evening or afternoon as a result of the occasion. Through the medium of papers read they had one of the none-too-many outlets for the dissemination of technical, organisational and other views that should be based on the experience of the individual in the course of his years of work. One of the Board's greatest difficulties had been to contact so wide a field comprising the individuals working up the full membership of the area. They could not meet too frequentiy. If they could, by having a large organisation like the Gas Board, achieve more in the public interest in the service to which they belonged then clearly that alone justified what they were doing. So much that one heard of the criticism by the public was based on completely false thinking.

He agreed the Juniors were not seeing enough of the members of the Board. It was important they should know what the juniors were doing or trying to achieve and vice versa, but to suggest that a member of the Board should attend all meetings of the juniors was, in his view, a completely wrong approach. It was important to keep in touch, but it was equally important that juniors and any other corporate body should plough their own furrow and every now and again compare notes with others. Some of them might say the Board would try to control the activities of the juniors. God forbid! As an association they ought to be able to do much to bring on the younger members and provide those who would ultimately take the places of seniors.

Educational Training

That brought Mr. Welman to the more important question of educational training. He believed they should use to the fullest extent all the training facilities available in technical colleges, correspondence courses and 'any other tools' that were at hand, but he did not think they were likely to be enough to serve the Board's real purpose. It was his plan that they should ultimately have their own residential colleges, particularly for the training of gas engineers. Why, in their area, should they have such colossal failures at examinations as revealed by the figures which he gave at the area staff conference that week? 'The young men of today,' said Mr. Welman, 'are every bit as good as, if not better than, the young men of my generation, but something is wrong if we achieve no better results than those shown lately.' He thought the whole thing came down to this: Simply no guts. The Board would provide facilities for learning but if any young man wanted to progress he could, and would if he would show guts and give the time and trouble to his learning. They only got out of life what they put into it.

The financial statement showed a credit balance but several officers complained that arrears of subscriptions were far too heavy. There had been a net increase of two in the membership which now totalled 443.

Presentation of awards included:—North Western Board's silver medal for a paper on 'Power Generation in a Gasworks,' T. Andrews, Liverpool; runner-up, C. H. Langley; the S.B.G.I. medal and the Colonel Can prize: Maurice Redman, employed at headquarters for a paper on 'Ancillary Plant Capacity'; F. Johnson prize: C. Taylor, Stretford for a paper by a member under 25 years of age; silver medal of the Institution of Gas Engineers for a paper on 'The Economics of Gas Production': T. Nicklin and M. Redman.

At this stage Mr. Townsend vacated the Presidential chair to Mr. Howell whom he invested with the official badge.

Mr. Howell, then delivered his Presidential address which will be dealt with in a later issue of the *Journal*.

A Cannon Television.—On October 30 Mr. Philip Harben demonstrated the new Cannon A125 cooker during his television cooking programme, mentioning that he was using the eye-level grill so that he 'could see what was going on.' The following morning Cannon (Holdings), Ltd., received a telegram 'Request immediate delivery date of Cannon gas cooker featured in last night's demonstration on television.' Seeing is believing!

Conference of Welsh Chairmen and Conveners

New 'Save and Sell' Slogan Adopted

THE seventh conference of the Group Chairmen and Conveners of the Wales Gas Board was held at Aberystwyth on October 17-19. The Chairman, Deputy Chairman, and other members of the Board, together with chief officers, were present, and a warm welcome was extended to the Chairman of the Gas Council, Colonel H. C. Smith, C.B.E., J.P., the Deputy Chairman, Mr. Henry F. H. Jones, M.B.E., and Mr. K. L. Stock, Head of the Gas Division of the Ministry of Fuel and Power. As usual, papers were circulated well before the conference and were discussed in detail.

Among the papers were two by Group Chairmen (Mr. K. E. TIDDY, Carmarthenshire and Mr. T. T. RADFORD, Montgomeryshire) each giving details of main laying schemes which had been organised on a group basis. An opportunity was given for comparing and contrasting the different composition and administration of the main laying gangs set up under the respective schemes.

Ideas Invited

Mr. S. L. WRIGHT, the Board's Gas Engineer, presented a paper which dealt with a number of subjects, including the need for encouraging managers to bring forward their ideas for effecting improvements in works operations to meet ever changing conditions; economy in the use of steam power; the economical use of lubricating oil; and calorific value control. It also dealt with the use of ammoniacal liquor as a fertiliser and detailed the experimental work being carried out at the Llandrindod Wells undertaking in conjunction with the Ministry of Agriculture and Fisheries as a result of which it was found that ordinary gasworks liquor effluent can be used successfully to replace sulphate of ammonia treatment for grassland.

During the discussion, Mr. D. WALTERS DAVIES, B.SC., head of the National Agricultural Advisory Service of the Ministry of Agriculture and Fisheries, gave details of some experiments which had been carried out by his Department, which proved that if used in the right quantities, ammoniacal liquor was a good substitute for sulphate of ammonia. The only difficulty so far as he could see would be in the storage and transportation of large quantities and he exhorted engineers and managers to make strenuous efforts to overcome such problems.

Distribution Problems

Mr. W. T. HIRD, Distribution Engineer, again emphasised in his paper the importance of unaccounted for gas, and not only called for yet further efforts to be made to reduce the overall figure of unaccounted for gas in the area, but gave details of ways and means and additional steps to be taken. The paper suggested a new motto for each manager —'Save and Sell'—and this was adopted by the conference.

Other distribution problems were dealt with, including cost of main and service laying and details of local authorities who had accepted the Board's standard terms for housing.

Mr. C. B. MAWER, Secretary, presented a paper in which he referred to the need for economy in all directions, while publicity, advertising, showrooms, display panels, etc., also received attention. An interesting appendix contained advice and exhortation in the form of 'Do's and Don'ts,' which were approved.

Legal Questions

Mr. D. H. GRIFFITHS and Mr. T. O. JONES, solicitors, in their paper reiterated instructions on the procedure for re-declaration of calorific value, and gave further advice on the Public Utilities Street Works Act 1950, Town and Country Planning Act 1947 and also stressed the need for easements to be obtained, when possible, well in advance of the date of requirement.

Mr. TREVOR A. MORGAN, Chief Accountant, covered a wide range of subjects relating to the accounts of the Board and at undertaking level. Advice was given on the preparation of annual estimates; as also were instructions for implementing the Board's superannuation scheme now approved by the Minister of Fuel and Power.

Mr. W. H. TARN, Industrial Engineer, presented a paper which sought criticism on the adequacy or otherwise of the service rendered by the Board's Industrial Gas Department. The conference was unanimous in its appreciation of the value of such services.

Mr. T. S. RICKETTS, Grid Manager, in his first paper, reviewed the progress made during the first year of the working of the eastern section of the South Wales gas grid, and the paper proved to be of great value in helpfully reviewing the problems and opportunities that grid schemes brought about.

Mr. W. E. CROWLEY, Industrial Relations Officer, reviewed overtime bonus schemes, gas fitters' classification and other matters pertaining to industrial relations.

Coke Stocks

Mr. W. CLARK JACKSON, M.B.E., Coal Officer, gave information concerning availability and stocking of coal, coal testing, etc. A valuable addition was the production of a pamphlet shortly to be published giving complete and concise information on the subject of coal in all its aspects.

A session was devoted to Civil Defence.

Following the papers, Mr. R. S. SNELLING, Deputy Chairman of the Board, addressed the conference on management generally. He said he had been struck during the conference by the emphasis on economy and improved efficiency. Mr. Hird's slogan 'Save and Sell' fitted in far better with the ideas of the Board than 'Pass it on to the consumer.' The Board had never fully passed on to the consumer at any time the increases in costs which it had had to bear since nationalisation, but had always endeavoured to meet those costs by improved methods and increased outputs. To do this it was essential to have good management, and the Board

The top table at the informal dinner on the occasion of the seventh conference of Chairmen and Conveners of Group Committees of the Wales Gas Board. In the back row are J. Henwood Jones (Town Clerk of Aberystwyth), R. S. Snelling (Deputy Chairman of Wales Gas Board), F. E. Price (Part Time Member of Wales Gas Board), D. Walters Davies (National Agricultural Advisory Service). In the front row are K. L. Stock (Ministry of Fuel and Power), J. Morgan Jones, C.B.E. (Ministry of Agriculture and Fisheries), His Worship, The Mayor of Aberystwyth (Councillor J. L. Davies), T. Mervyn Jones (Chairman, Wales Gas Board), Col. H. C. Smith, C.B.E., J.P. (Chairman, Gas Council), Henry F. H. Jones, M.B.E. (Deputy Chairman, Gas Council), and E. M. Edwards (Member, Wales Gas Board).

looked on this as one of the most important functions in the industry, and the first attribute of good management was getting the best out of the men over whom managers had control. To do this it was first necessary to secure and maintain their interest in their jobs. This could be done in various ways, but not without carefully studying each individual. He should be helped to enjoy and be happy and contented in his work, and the manager more than anyone else could help him in this direction. Delegation was a most important function, and anyone not using powers of delegation was doing himself a grave injustice. Managers should never be too busy to interview anyone, and should always give careful consideration to the selection of human material. They should not be in too much of a hurry to get rid of men who were not 100% efficient. It was far more satisfying and worthwhile to make good men out of the mediocre. There should be a distinct difference between treating men fairly and treating them sympathetically —men wanted to be treated fairly. Listening was an art in good management. Managers should never hesitate to shoulder responsibility for anything which went wrong, and indeed, should make it known that they were so responsible. Accessibility to one's staff, as far as possible, at all times, was an asset and would give satisfaction even if adverse decisions had to be given.

Managers' Responsibilities

Finally, the Deputy Chairman emphasised that the Board had endeavoured to place responsibility on managers and group committees, and with this responsibility had been given the corresponding authority. He believed under the Board's system managers were given at least as much if not more authority than before vesting day. The Board implied and expected the utmost integrity from the personnel concerned—it did not expect 100% but was receiving it to an extent which justified the system.

Colonel H. C. SMITH expressed the pleasure that he and his Deputy Chairman, Mr. Henry Jones, felt on being invited to the conference and spoke of its usefulness to all concerned. He made observations on each paper in turn and commented on the value of the discussions. He was impressed with the enthusiasm with which the running of the gas industry was being tackled in Wales. He made special reference to the statement on management made by the Deputy Chairman of the Wales Gas Board. In his opinion, management depended on four loyalties: (1) to one's chief, (2) to one's colleagues, (3) to one's staff and (4) to oneself. He felt the higher a manager went the more he became a servant. Finally, he stressed the need for patience and tolerance during the course of one's duties.

An informal dinner party on the Saturday evening was attended by the Mayor of Aberystwyth (Councillor J. L. Davies, who by way of occupation is Chief Rental Clerk at the Aberystwyth undertaking), the Town Clerk of Aberystwyth (Mr. J. Henwood Jones) and the Permanent Secretary of the Welsh Department, Ministry of Agriculture and Fisheries (Mr. J. Morgan Jones, C.B.E.).

Among Managers not normally attending was Mr. L. R. Robertson, B.E.M., of Machynlleth undertaking, who was suitably honoured on the Saturday evening, the occasion coinciding with his 60th birthday.

SUNDERLAND DIVISION DEVELOPMENTS

THE industrial demand for gas in Sunderland is increasing to such an extent that the Northern Board has sanctioned a scheme for the reconstruction of a section of the carbonising plant at the Hendon Works, which it is hoped will be operating by January, 1953. This was reported by Mr. W. O. Kirkwood, General Manager of the Sunderland Division, in a report to the Sunderland Division Consumer Committee. Mr. Kirkwood said that with the completion at the end of the present year of a new 2¼ mill. cu. ft. capacity gasholder at the Hendon works the gas storage capacity at Sunderland would be increased by 50%.

To meet the requirements of the Bristol Aeroplane Company for their new factory on the Pallion trading estate, Sunderland, a new main has been laid from the medium pressure main interlinking the Hendon and Ayre's Quay works, said Mr. Kirkwood. The potential demand of this recently acquired large industrial consumer will be in the region of 250,000 cu. ft. per day.

Pipes for New Houses

Turning to the question of cast-iron pipes for new housing estates Mr. Kirkwood said that this matter had been receiving urgent consideration to ensure that gas was available as soon as tenants were ready to occupy the houses. To alleviate the shortage of cast-iron pipes, on which there was a delivery delay of three to three and a half years, a quantity of asbestos cement pipes had been obtained and these would be used in selected positions on new housing estates at Sunderland.

On the Sunderland Corporation's latest estate, at Hylton Red House, where ultimately more than 5,000 people will be living, an additional 12-in. diameter low pressure main has been completed from the Queen Alexandra Bridge to the estate and it is planned that this will be extended towards a subsequent estate which the Corporation is to build at Castletown. The implementation of this new main will relieve the load on the Washington high pressure main which is at present supplying the Hylton Red House Estate, he added.

Improving Supplies

Mr. Kirkwood reported that to improve supplies in the Washington area work on the foundations of a new 250,000 cu. ft. gasholder had started and subject to satisfactory delivery of materials this holder should be available for use during the winter of 1953-54. To improve gas supplies in the Gilesgate area of the Durham unit the laying of a new 12-in. diameter low pressure main from Bishop's Mill to Gilesgate would commence in October and every endeavour would be made to complete the project in record time in order that consumers in the area might benefit under winter peak conditions. So that gas pressure in the Framwellgate area of Durham could be improved new gas boosting equipment was to be installed during the next few months. This equipment would be of sufficient capacity to meet the potential requirements of housing development at Framwellgate.

At Craghead, in the Stanley unit, to meet the increasing demand for gas a new 6-in. diameter medium pressure main had been approved and work would be started on the laying of it in November. This main would convey gas from the Chester-le-Street gasholder station to Craghead. Mr. Kirkwood said that in order to meet the gas requirements of the Annfield Plain Trading Estate, a new 8-in. diameter main would be installed during the next two months. The capacity of the proposed main would be of ample size to meet the total potential gas requirements of the estate.

Publications Received

The Theory and Practice of Vitreous Enamelling, by J. H. Gray, A.I.MECH.E., deals with the fundamentals of vitreous enamelling on steel and cast iron. The aim of the author, who is a Director of Stewart & Gray, Ltd., has been to give a clear and practical description of all aspects of the subject, yet with sufficient detail of the theory of the process to serve as an introduction to the more advanced standard treatises. The book (price 10s. 6d.) is obtainable from the Secretaries of the Institute of Vitreous Enamellers, c/o John Gardom & Co., Ripley, nr. Derby. The author is donating all the proceeds from the sale of the book to the funds of the Institute.

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The new edition of the list of *National Committees and Representatives of the World Power Conference* gives full and up to date information as to the composition of 37 National Committees of the World Power Conference. The membership of the British National Committee is shown and the list also gives the names of the world power Conference representatives in three other countries (Ceylon, New Zealand and Pakistan) which do not yet possess National Committees. Copies of this document can be obtained from the offices of the British National Committee, World Power Conference, 201-2, Grand Buildings, Trafalgar Square, London, W.C.2, price 1s. 6d. post free.

AMERICAN SPOTLIGHT

Items of Topical Interest from the Contemporary Technical Press of Canada and the United States

LEVELLING THE GAS BILL

AN interesting plan has been devised by the Portland Gas and Coke Co. for levelling off the winter heating bills. Recognising the fact that normally more than 50% of the entire year's heating costs comes during December, January, and February, the plan levels off those three months by means of credit built up during the summer and early fall. Response has been enthusiastic—more than 1,350 house heating customers having requested the budget plan in the first month following the mailing of particulars.

During the five months when heating costs are lowest, budgeted amounts representing approximately one-quarter of the yearly bill are added to the monthly accounts. Then during the five coldest months these amounts are subtracted from the bills. The result is a more uniform gas bill irrespective of the season. The Company pays a bonus equal to about 3½% p.a. interest on the amounts added to the summer bills. The interest is deducted from the April account.

Several advantages are claimed for this system. There is no month-end reconciliation of customers' accounts, and book-keeping costs are consequently kept at a minimum. It is expected to aid materially in eliminating many of the high-bill complaints during the winter months, and it will also reduce the number of delinquent bills and partial payments during those peak months. (*American Gas Journal.*)

* * *

ANOTHER RACKET

MOST gas industry men know about the fly-by-night operators of the vicious 'gypsy racket.' But few restaurateurs know about these high-pressure rascals.

These 'gypsy racket' operators give fictitious names, addresses and affiliations. Their pitch is to offer to clean and rebuild kitchen cooking units. They usually give a low estimate, and start by doing a good cleaning job. But as work progresses, more parts are found that need replacing. Then, in the final swoop, they convince the owner that he needs special insulation in various units. They offer to put it in for the cost of the material, with no charge for labour. The insulation is nothing more than asbestos cement worth 4 cents a lb. It does become very special, however, when the 'gypsies' present a bill for 200 lb. at $2.50 a lb.! By then it is too late for the owner to do anything but protest. Inasmuch as the work done and material used were authorised, he must pay the bill, the victim of an expensive lesson.

One of the worst aspects of the operation is that this so-called insulation creates serious hazards. Asbestos cement, when heated, becomes a loose powder. When applied haphazardly, it clogs air intakes and combustion areas, and prevents free circulation of heat in ovens and hot top sections.

Since no immediate legal recourse is open, the industry must use the next best vehicle—widespread publicity. (*A.G.A. Monthly.*)

* * *

PROPANE TO THE RESCUE

ON the evening of March 4 an explosion completely demolished the water gas plant at Laconia, N.H., cutting off the supply to 400 consumers on one (high-pressure) section of the distribution system. Within a very short time a tank truck and a propane-air machine were on the spot producing propane-air gas of 700 B.Th.U. and providing a satisfactory substitute for the 600 B.Th.U. water gas.

The following day three 2,650 gal. tanks were installed and loaded with propane, thus releasing the tank truck from which the gas was made during the interim period. Twenty-eight conversion men were rounded up from various points in New England to handle the conversion of consumers' appliances, and within three days the compressors were put into operation again, restoring the supply to the 400 consumers on the high-pressure system. The supply to 1,450 consumers on the low-pressure section had not been interrupted by the explosion as the gasholder serving this section had not been damaged.

A permanent propane-air plant, including two 30,000 gal. storage tanks, has since been installed to replace the demolished plant. (*Gas Age.*)

* * *

SERVICE TRAINING

AN enthusiastic response greeted the latest in the Consolidated Edison Co. of New York series of training programmes for informing appliance dealers, servicing agencies, master plumbers and governmental inspection and regulatory bodies of modern practices in the installation and servicing of gas appliances. Three hundred and fifty representatives of these groups attended the programme in its first two months. Con. Edison has long followed a policy of encouraging independent agencies to undertake the sale, installation and servicing of electric and gas appliances.

In addition, opportunity is taken to review sound installation and servicing practices which are incorporated in the New York City Administrative Code and which must be observed by people in the gas trades. The latest recommendations and standards of the American Standards Association and the A.G.A. are also discussed. (*Gas Age.*)

'OVEN HOT' SIGNAL

TO determine the reaction to a new product among their thermostatic controls—a device to signal the housewife when the gas oven is up to the required temperature for cooking—the Wilcolator Co., of Elizabeth, N.J., recently sent out a questionnaire to major appliance dealers, public utilities home service experts, commercial managers, and publication editors.

Response to the survey showed an average return of better than 30%. Among those replying, 95% indicated a favourable opinion of the device as a spur to added sales of gas ranges.

'It has always been our opinion,' says H. A. Wilson, President of Wilcolator, 'that manufacturers of gas ranges should provide a simple and reliable means of indicating to the housewife that the oven is up to temperature and ready for use. Competitive fuels have this feature on their stoves and use it effectively in selling ranges.' (*Gas Age.*)

* * *

UNETHICAL PROPAGANDA

AS graduates of the old school of business philosophy which taught that all competitors are a parcel of prevaricators at heart (writes Elliott Taylor, Editor of the *American Gas Journal*), we sometimes find it hard to view with the proper degree of sustained amazement the outrageous claims of superiority made by the champions of electric cookery.

That they don't put too fine an interpretation on the shades of distinction between outright untruth and misleading innuendo is granted. To hear them tell it, a ten pound standing rib roast shrinks to something resembling the bleached bones found around a dried-up water hole if it is cooked in what they pityingly describe as a flame type oven. The kitchen in which a gas range is used early takes on the dark patina of a railroad roundhouse roof as the boiling clouds of soot and fumes roll up from the flaming inferno over which the haggard housewife stands sweating away her physical charms along with the best years of her life. And the little Katzenjammers in the family slyly await their chance to turn on all the top burners so they can rush out into the back yard and watch the house go boom.

Understandably, this sort of propaganda makes irritating reading for the dyed-in-the-wool gas man. Recently it got under the hide of the Lone Star Gas Company management to the extent that the company sent out a letter to 250 editors of Texas newspapers hoping to spark the electric industry to confine itself to fair claims in its press releases. Lone Star urges every other gas utility in the country to adopt the same attitude and to challenge every misstatement that appears in print.

NON-SPARKING TOOLS

By C. H. MEIGH, M.Inst.Met.,
Managing Director of Meigh Castings, Ltd.

THE elimination of sparks in the proximity of explosive gases has created many complex problems in design, manufacture, and use of non-sparking tools. This article gives a brief survey of experiments undertaken and successes achieved in the past two years.

At the outset, attempts were made to use non-sparking material in exactly the same way as steel had hitherto been used, but experience showed that materials which did not possess the same elastic properties and hardness as steel could not be successfully used without modifying designs, production methods, and, in many cases, the technique in handling the tools.

Towards the end of 1950 certain gas boards conducted tests on non-sparking tools made in a copper-aluminium base alloy, containing nickel, manganese, and iron in about equal proportions and, as a result, an allocation of copper, sponsored by the Ministry of Fuel and Power, was granted and this enabled the delivery of some 5,000 tools, of various types and sizes, to the gas industry up to the end of August, 1952. The material was sold under the name of 'Meigh Metal' and with few exceptions the tools gave entire satisfaction. Percussive tools, however, presented a number of problems which are analysed in the present article.

Characteristics and Design

After preliminary tests had been made with percussive tools of classical design, the method of approach to production problems was changed and attempts were made not merely to develop the old type of tools in non-sparking material but to re-design tools where necessary, on the lines of those shown in the illustration, to give the best results with new materials which have a set of characteristics different from those of steel. The initial work entailed a considerable amount of research work which showed that it was necessary to use the process of 'strain hardening' and 'hammer hardening' to obtain the required characteristics. The natural resistance of the metal to wear by abrasion, corrosion, and oxidation proved to be of great value.

The elasticity (proof stress) and hardness of non-sparking material in either the 'as cast' or 'forged' state, with or without heat treatment, was found to be far below requirements for certain applications, but it was known by previous experience in other work that the characteristics could be improved by 'cold working,' either before the metal is put into service or during service.

As 'work hardening' is not currently employed in engineering, its mechanism and use will be outlined in this article and reference will be made to the various tools illustrated.

The pneumatic digger used for breaking-up hard oxide in gas purifiers furnishes a good example in which to analyse physical requirements and changes in characteristics brought about by 'straining' or otherwise 'working' the metal. The cutting edge can be hammer hardened before or after use and the operation transforms ductility (elongation) into hardness. The same remarks apply to the shank fitting, which can be made to attain the required hardness in service by repeated shocks which cause a limited deformation. Allowance in dimension for the deformation can be made before the tool is put into service.

There remains the shank below the collar and the blade above the cutting edge, both of which work under compressive and occasional bending stresses. If these stresses are evenly distributed by appropriate design, strain hardening occurs progressively, with negligible dimensional changes, throughout the entire volume of metal and ductility is transformed into elasticity, with a margin of safety dependant chiefly on design.

Sections which ensure an even stress distribution in a tool of irregular shape, such as a pneumatic spade, are costly if not impossible to produce by forging but can be easily obtained by casting, and this limits the choice of material to one which possesses good castability. Forms which are easily produced by forging are apt to present more or less abrupt changes of section, which lead to stress concentration and failure in metals possessing a lower elasticity than the steel for which they were designed.

Cruciform or webbed sections are effectively used not only to distribute stresses but to obtain the best possible strength/weight ratio, which is important when dealing with costly materials. Weight saving is important for other reasons and the light designs of wedges (covered by Provisional Patent Application No. 9354/15/4/52) shown in the illustration offer the following interesting points for consideration.

The saving of weight in a driven wedge is not only economical in cost but in energy—*i.e*, the amount of force used to obtain a given output of work or penetration of the wedge into the oxide bed. The greater the dead weight of the wedge, the greater the amount of energy absorbed and, incidentally, the greater the deformation of the metal at the head of the wedge. This deformation occurs principally on or near the border of the metal and leads to burring and splintering if maintenance is neglected.

Non-sparking tools cast in Meigh metal.

The physical requirements of the wedge are to a great extent the same as those described for the pneumatic digger, the main difference being that, whereas the pneumatic tool is subjected to relatively light repeated shocks, applied with precision, the hand wedge receives fewer but heavier shocks with little or no precision. In the body of the wedge, stresses are evenly distributed and weight is kept at a minimum by the use of webbed sections.

Stress distribution on impact surfaces depends on the impact area of the wedge head and the hammer face, particularly when the hammer blow is not accurate, and the best distribution of surface has proved to be obtained by a relatively small head on the wedge, used in conjunction with an increased

impact area of the hammer face, which is illustrated in the 'Mallet' type sledge hammer. This combination reduces burring to a minimum. In this particular case, lack of initial hardness is compensated by an increased impact area and hardening takes place during service.

These few examples of 'work hardening' are given to illustrate a process the application of which varies with each individual job, but to be efficiently used the process must be understood. The light hand-driven wedge is a typical example of a problem that has been solved by appropriate design.

The characteristics of metal which are published in various specifications for the purpose of comparison are obtained from a standard traction 'destruction' test which, in the case of the alloy under consideration, gives:—

0.1 Proof stress = 18 tons sq. in. Ultimate tensile strength = 45 tons sq. in. Elongation 12%.

The object of the test is to obtain comparative destruction figures in a relatively short time. The speed at which the load is applied and the uni-directional straining limit the effect of the straining to a low but relatively constant value for that particular test, and a totally different set of figures is obtained when the load is applied at a different speed.

Thus, straining operations which are carried out with the object of improving the elasticity to the detriment of the ductility consist of applying lower, alternating stresses over a much longer period, and if continued to the point of destruction the 0.1 proof stress and the ultimate tensile strength are increased to over 80 tons per sq. in. when elongation = 0%.

Alternate straining may be done by bending, torsion, or compression, with very small dimensional changes.

The process of strain hardening cast objects, before they are put into service, is employed when the quantity required off any one pattern justifies the outlay on a special machine. The operation, in itself, is automatically controlled and is not costly to operate. Alternate torsional straining is usually employed to improve elasticity in castings before service and could be easily applied to pneumatic tools if they were standardised.

It is emphasised that stress distribution in a tool is largely a question of design and the ability to produce webbed profiles, which, in turn, is dependent on the castability of the material used. The 12-in. × 14-in. shovel, illustrated, is cast with a cored shank in one piece and demonstrates the exceptional castability of the metal under consideration.

Maintenance

Non-sparking tools require greater care in handling and in maintenance than steel tools used for the same purpose, but the extra work should be considered as being a low price to pay for safety. When the nature and characteristics of the metal are better known maintenance becomes largely a question of common sense and elementary organisation.

A tool that has become blunt with use has also attained hardness, which can be destroyed by allowing the temperature of the edge to reach annealing point by grinding. If a tool is kept cool, light grinding does no harm except that it wastes metal. Quenching does not affect the hardness of the metal.

It is far more economical to 'draw out' the edge or point of a tool on the anvil, while hot, and finish the operation by 'cold hammering,' and the average blacksmith soon gets into the job and does it well. The metal can be heated to 900° C. but if there is no temperature control it is preferable to forge the metal at a dull red and heat more often to complete an operation.

While it is not suggested that non-sparking tools should be subjected to a complicated heat treatment, an understanding of the possibilities may be of use.

If the scope of the designer is restricted, which is the case when the section of a pneumatic digger shank is limited by the size of the tool holder sleeve and retaining device, there may be no factor of safety and, when the ductility of the metal has been transformed into elasticity or hardness, a point is reached at which the proof stress equals the ultimate tensile strength and fracture occurs. In such cases, it may or may not be a practical proposition to anneal or normalise the metal after a given length of service, with the result that elasticity or hardness is transformed into ductility and a new span of life may be given to the tool.

Normalising has the inverse affect of strain hardening and in practice the operation is carried out automatically when a tool is heated for 're-tipping'; but if the mechanism is understood the heating operation can serve two purposes with little or no extra cost or trouble. It is, for example, easy to heat the shank of a digger when drawing out the cutting edge while leaving the shank fitting cool. This retains the hardness of the shank fitting and presents further dimensional changes when the tool is again put into service.

When a tool is broken it may be worth while repairing, particularly when no replacement is available with which to finish a job, and in such cases electric arc welding, with sticks of the same composition as the parent metal, gives satisfactory results.

The composition of the flux is:

Cryolite 60%; fluoride of sodium 40%.

If welding is used, the following points should be considered—

A tool that has broken due to excessive strain hardening should be normalised after welding.

The part of a tool which has been worn or ground away and requires 'building up' to size by welding may require hammer hardening before it is put in service.

The characteristics of the added metal, in a weld are the same as those of the parent metal in the 'as cast' state.

Conclusion

The foregoing is a brief description of the lines on which development work has been done and is still proceeding in collaboration with a number of gas engineers in different parts of the country, but, to make the picture more complete, some of the non-technical difficulties encountered by the producer should be mentioned, and again the pneumatic digger is taken as an example.

Pneumatic tool holders were designed for high tensile steel tools and are widely different in types and sizes. Some are unsuitable for tools in non-sparking material. The hardness of the oxide to be worked and the working conditions vary from one works to another, so that test results on tools are not necessarily comparable even though they are made available to the producer. To attain complete success with non-sparking tools, investigation of design should not be limited to the loose tools, but should start with the pneumatic tool holder, and, this would bring about a large degree of standardisation and reduction in costs of loose tools.

Finally, there is the human element, typified by the faithful foreman who holds the opinion that as non-sparking tools are more costly they should give a longer life than steel tools, irrespective of the way they are handled.

These and other difficulties render progress in developing percussive tools slow and costly, but progress is being made and development work generally will be facilitated when the fundamental requirements and basic facts relating to the material become better known through practical experience in the production and use of the tools.

MORE SULPHUR ALLOCATED

THE SULPHUR COMMITTEE of the International Materials Conference has announced a supplementary distribution of 29,800 tons of crude sulphur for the last six months of 1952. When the provisional plan of distribution was made it was on the understanding that the committee might review the allocation for the fourth quarter. It has not been found necessary to carry out a general review of the allocation, but new evidence has been presented of increased export availabilities from certain exporting countries, mainly Latin America. The original allocation also provided for a quantity set aside as a contingency reserve. The balance of this contingency reserve is now being distributed. After reviewing these factors, the committee has recommended a supplementary distribution. Of the additional 29,800 tons, 4,300 tons goes to France, 1,300 tons to Finland, and the remainder to India, Australasia, and South American countries.

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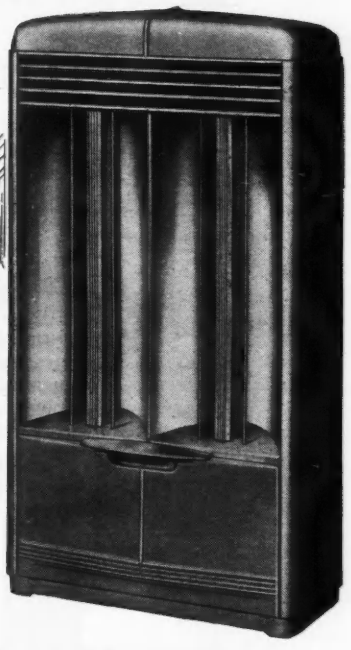

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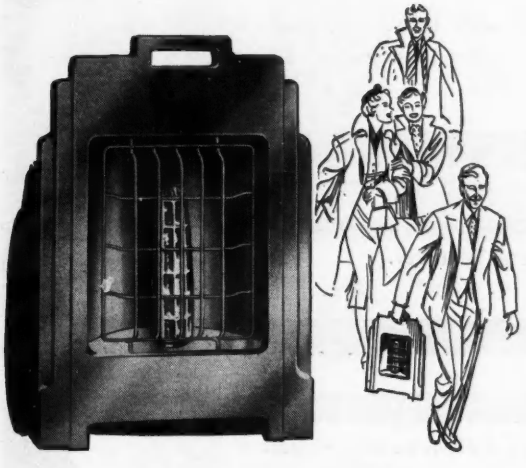

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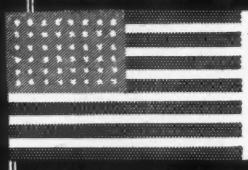

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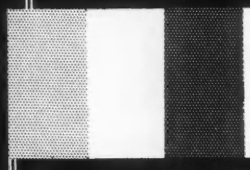

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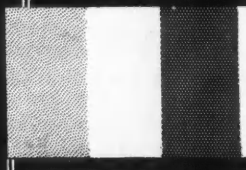

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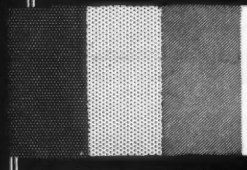

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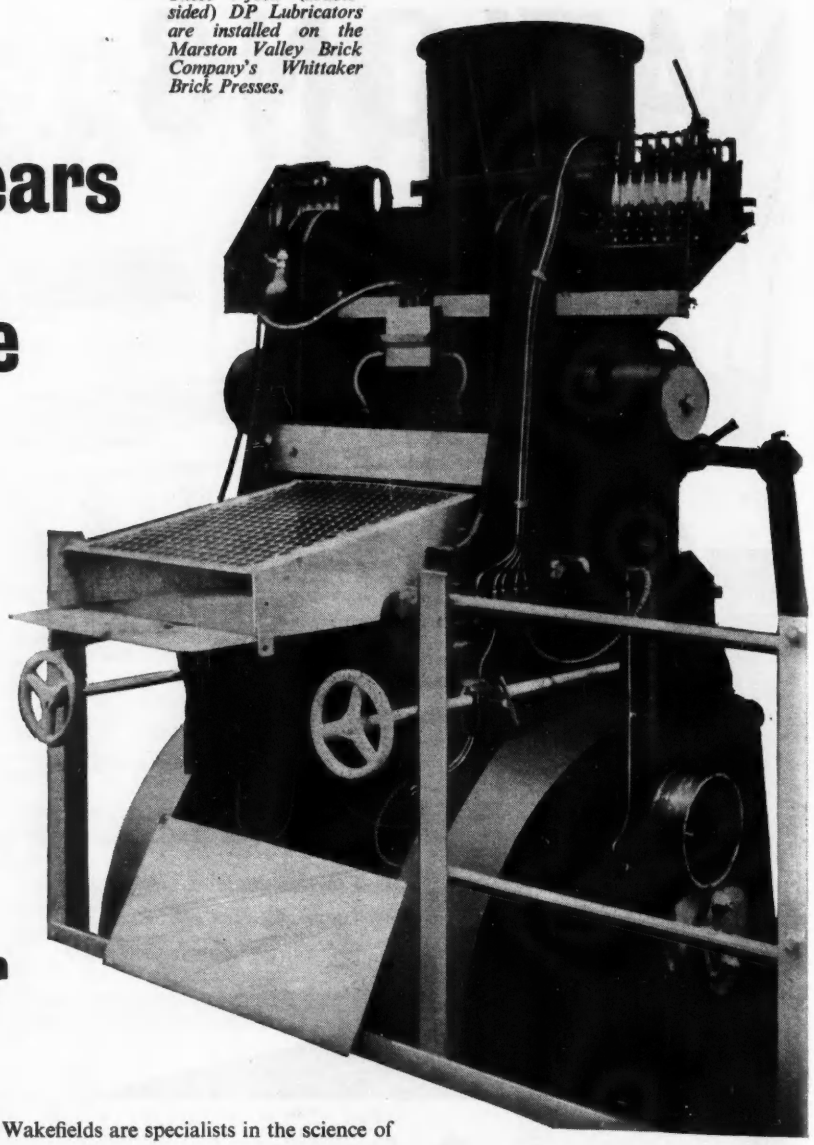

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INFLUENCE OF ASH ON GAS PRODUCERS *

By L. G. TOWNSEND, M.Sc., F.R.I.C., M.Inst.Gas E.,
Liverpool Group, North Western Gas Board.

ASH removal from step-grate producers, whether independent or built into carbonising plant, does not readily lend itself to mechanisation and is invariably a manual process in this country. On the Continent, however, a step-grate producer with movable grate bars to assist ash removal has been constructed but has yet to be proved. Step-grate producers supply the fuel gas for the majority of town gas manufacturing plants and their gradual replacement by mechanical plants is still problematical, although at Liverpool two of the seven works employ mechanical producers exclusively and a further works will be similarly arranged in about three years time. Mechanical plants, however, appear to provide the only satisfactory solution to the problem of manual fire cleaning and ash handling. It should be remembered also that the amount of ash actually handled is some 30% more than 10 years ago, and, while this increase still continues, the work of fire cleaning becomes imperceptibly but steadily more arduous.

A further disadvantage of manual fire cleaning is the greater proportion of combustible matter removed with the refuse. Attention was directed to this matter a few years ago by the Ministry of Fuel and Power, and figures quoted by Walker[1] from this source are given in the accompanying table.

MINISTRY OF FUEL AND POWER FIGURES FOR COKE CONTENT OF ASHES

Town	Coke, %	Clinker, %	Fine ash, %
Blackburn	44	23	33
Brighton	43	32	25
Hampton Wick	54	17	29
Lea Bridge	42	21	29
Nelson	42	26	32
Oxford	43	25	32
Richmond	40	33	27
Southampton	53	22	25

The survey showed that it was not unusual to find as much as 40% of coke in the refuse from hand-cleaned producers. This represents some 7% of the coke supplied to the producer, and is a significant item in the cost of manufacture of producer gas. Where such conditions exist, a good case can be made for a plant to recover coke from ashes. In water gas manufacture, mechanical grates with automatic ash removal are now the rule, and manual types are being completely replaced. Carbonising plant, however, still relies largely on built-in or independent step-grate producers, and considerable improvement in design and operation has minimised the loss of combustible matter with the refuse. The modern step-grate producer with multiple cleaning doors and large grate area is completely reliable and fire cleaning is relatively simple. The general procedure for fire cleaning is to break up the ash and clinker at higher levels and push it away from the steps. Very little material is removed from the upper steps. The ash and clinker thus 'work' down through the fire and are removed from the bottom of the grate. The ash removed from such producers always shows incipient fusion, but excessive clinker formation is avoided by judicious regulation of the steam admitted with the primary air. Ash and slag attack on the lining of these producers is limited to certain areas, notably the brickwork around the step cradles and above the lintel of the grate. These areas always receive attention during the cleaning operation.

In the more modern type of producer, serious clinker formation above the lintel is avoided by inserting a blank plate or water trough at the top of the grate. It is also quite general practice to bank up the steps of the grate with ashes after cleaning; this practice assists in distributing the blast and gives some protection to the cast iron steps. Slag attack cannot be completely overcome, and it is usual to line these producers with hard-burnt aluminous bricks, which show good resistance to slag attack. Such relining, however, should not be necessary under good operating conditions at more frequent intervals than every two or three years.

It is generally stated that no serious clinker trouble can be expected with gas producers if the fusion point of the ash in the fuels is above 1,200°C. under reducing conditions. Routine determination of the ash fusion point of coal and coke is not the rule in the gas industry. The few tests available for coals received in the Liverpool area show that the figure of 1,200°C. is, in general, comfortably exceeded. Under normal conditions step-grate producers operate at low gasification rates of the order of 10 lb. of coke per sq. ft. per hr. or less, and serious trouble with clinker is rare. The modern type of step-grate producer permits of close control of the steam/air mixture, and comparatively small amounts of water are used on the grate bars, the ash-pit being run dry. The control of the fuel-bed temperature in this way, together with improved grate bars which facilitate cleaning operations, probably accounts for the freedom from clinker trouble as compared with older type grates. The use of larger proportions of steam to deal with fusible-ash difficulties results, however, in some sacrifice of producer gas quality and a tendency to drive the ash into the fire, thus removing more combustible matter with the refuse.

There are, however, still many step-grate producers which rely entirely on evaporation of water from the firebars for saturation of the blast, and in such cases little adjustment is possible. Low fusion-point ash may cause serious difficulties in these circumstances.

The process of ashing and cleaning step-grate producers can cause large fluctuations in gas quantity and quality, with variations of up to 20 B.Th.U. per cu.ft. in the calorific value. This is due to the disturbance of the fuel bed and the heat removed from it. For this reason the period between cleanings should be as long as possible compatible with efficient cleaning. In certain instances, with low-ash coke, this period may be as long as 16 hours. The difficulty is mitigated with modern types of step-grate producers by providing several cleaning doors so that only a small section of the fire is cleaned at any one time.

Even under the best conditions step-grate producer ash always contains significant amounts of combustible matter. Tests over a long period on the ashes removed from a modern battery of step-grate producers attached to an installation of continuous vertical retorts gave an average ash content of 75% in the dry ashes, which represents a loss of some 4% of the calorific value of the fuel supplied. This is considered to be the optimum performance of step-grate producers in this direction, during normal operation. On the other hand, with older types of producers the losses from this cause may be twice as great.

Mechanical Producers

Ash removal from mechanical producer plants of the Power Gas type in use at Liverpool is carried out continuously, and on this account there is a minimum of disturbance of the fuel bed. As a result, the quality of the gas from such mechanical plants does not show the variation which is a feature of many hand-clinkered producers. At the same time, the removal of ash from the generator is under close control, since the speed of the ash pan is variable from zero to a maximum which is high enough to deal easily with the amount of ash from the highest-ash fuel likely to be encountered.

* This paper was contributed, at the invitation of Council of the Institute of Fuel, to the Special Study of Ash and Clinker in Industry Conference, London, October 29, 1952.

The ash is removed from the ash-pan by a stationary plough which can be arranged to discharge on to a band conveyor, but more usually is received in a bogie which can be elevated to ash bunkers by skip hoist. Subsidiary adjustable ploughs attached to the skirt of the generator are sometimes fitted to balance the amount of ash removed at different positions in the ash-pan. Experience has suggested that these are not of great value. The use of curved ribs cast or bolted to the base of the ash-pan is sometimes advocated, but is by no means general. The original design of Koller grate fitted to Power Gas mechanical producer plants incorporated such ribs, which were about 4 in. deep. It was found, however, that they did not fulfil their main purpose of assisting the passage of ash to the periphery of the grate; in fact the whole of the base of the grate was covered with ash to the depth of the ribs. While this no doubt protected the cast iron baseplate from wear, at the same time it reduced the opening between the generator skirt and the ash-pan by a corresponding amount and obstructed rather than assisted the discharge of the ash. On this account the ribs were modified, and current design incorporates only small ribs about 1 ft. long at the outer edge of the baseplate, below the generator skirt. Nevertheless, ribs of smaller depth, say 2 in., or even angle-iron strips of the same depth, secured to the sloping portion of the grate, might be expected to alleviate wear and assist ash removal. Experiments so far indicate that the coke in the ashes is somewhat reduced when they are fitted, but the reduction is not significant. Recoverable coke from these producers is seldom greater than 3% by weight of the ashes and is small in size. Treatment of these ashes for coke recovery cannot therefore be justified.

Intermittent Ash Removal

In certain types of mechanical producers ash removal is intermittent. This is generally the case where the generator is constructed with mechanical water-cooled levelling bars on stirring devices. In such producers the generator body rotates at a relatively high rate to derive full benefit from the stirrers or levelling devices. Ash removal is accomplished by means of a plough which normally rotates with the generator, but when ashing is required it is held stationary by a locking device, when the rotating generator ploughs the ash out at a high rate. As the generator rotates once in 7 min. or so, the ash is only removed once per shift for a period of a few minutes. The duration of ash removal is related to the ash content of the fuel. It would be expected that under these conditions the quality of the producer gas would deteriorate appreciably immediately following ash removal. Such producers, however, are capable of high gasification rates, and any variation in gas quality is, relatively, a minor consideration.

With mechanical plants the ash in the fuel plays a very important part in the operation, since the protection of the grate and of certain parts of the generator body depends on the maintenance of a layer of ash and clinker between them and the high temperature gasification zone. At the same time this layer of ashes imparts a small amount of heat to the blast which is carried back into the generator.

The observation of the ash levels in the generator is a routine operation and is of such frequency that the whole of the generator is surveyed once per shift. The ash level is determined by inserting dip rods through the pokeholes in the generator top and withdrawing after a period of 3 to 4 min. The bottom of the rod in the ash zone comes out black, and the depth of this black portion gives the ash dip. It is usual to maintain a depth of 6 in. to 9 in. of ash above the apex of the grate and some 4 ft. 6 in. above the baseplate of the ash bowl at the generator wall. When restarting the plant from cold the ashes and clinker are charged into the generator before the fire is laid. Observations over a long period show that with plants on full load the grate-dome ash-dips can be maintained within a variation of 6 in. either way. Side dips are subject to much wider variations, as much as 18 in. either way being experienced. With normal operation, however, these large variations in side ash-dips apply to all positions which follow one another closely. This is due to the wide variations in the ash content of the fuel, which cannot usually be predicted and allowed for. The maintenance of this ash bed to protect the grate is so important that with difficult fuels of small size and high ash content it is desirable to fit pyrometers to the generator skirt to ensure that the fire does not get too low in the generator, as if this happened serious damage might result.

In certain circumstances, particularly when the plant is being driven beyond its capacity for the fuel being gasified, irregular ash-dips develop around the circumference of the generator and regulation of the grate speed effects little improvement. Conditions may be so bad that the fire may get below the water-jacket level at certain points and high ash-dips prevail at adjacent sections. These difficulties are attributable to the formation of masses of clinker in the generator, and poking from the top rod-holes tends to form blowholes which accentuate the difficulties and lead to flame in the generator top. The only real cure for such difficulties lies in reducing the load and changing to a larger-sized fuel until the clinker accumulations can be eliminated by breaking up with chisels. The development of such conditions is to be avoided, since permanent damage to the bottom wearing plates on the generator skirt may ensue. Where this occurs, ash removal is interfered with, and further trouble is always experienced.

Advantages of Water Jackets

Mechanical plants with annular boilers or water jackets seldom give trouble with clinker adhesion to the generator shell. The water jacket generally cannot cover the entire generator, and a section at the top of the generator is always firebrick-lined. The depth of this lining has a direct influence on the temperature of the gas leaving the generator. It was found at Liverpool[2] that extending this lining down into the generator as little as 4 ft., in order to increase the gas outlet temperature, led to difficulty with clinker deposit adhering to it, particularly at the bottom. The removal of 1 ft. from the bottom of this lining overcame the difficulty. This experience demonstrates the advantages of the simple water-jacketed generators over heavier brick-lined generators with respect to clinker difficulties. Difficulties due to clinker formation with mechanical plants gasifying coke are seldom experienced with the larger-sized fuels of unit size (1¼ in.-⅜ in.) and over. When fuels below ⅜ in. are used, clinker difficulties are usually present even though the plant output is substantially reduced. At the same time the combustible matter in the ashes may rise from 15% to 20%. The clinker difficulties with the smaller fuels are probably due to uneven blast through the fuel bed. The observation that clinker difficulties with coal increase with the fineness of the coal would seem to apply to coke also. When large masses of clinker form in the generator, poking tends to make matters worse by forming vertical holes in the fire and causing flame in the generator top. Ash extraction is difficult, and it tends to build up a high level in the vicinity of the ash-extraction plough. The breaking-up of clinker through the top pokeholes is extremely difficult and arduous and is accompanied by 'running through' of the fine fuel. With certain types of generator, the grate runs eccentrically to the generator and the rotation of the grate crushes the clinker as well as extracting it. It would be expected that such generators would be more amenable to the gasification of small coke. The ash difficulties with small fuel can also arise when no steps are taken to prevent the segregation of sizes in the generator. With most types of mechanical plant the fuel is distributed as evenly as possible over the fuel bed by means of chutes or by the rotation of the generator body.

The gasification of coke in oxygen and steam and the use of preheated air blast are directions in which improved thermal efficiency is being sought. There would appear to be little prospect that plants embodying these features will be installed in this country, and at the present time experimental work is still in progress. It may be expected, however, that the continual quest for improved efficiency and higher gasification rates will bring the question of ash and clinker more into prominence.

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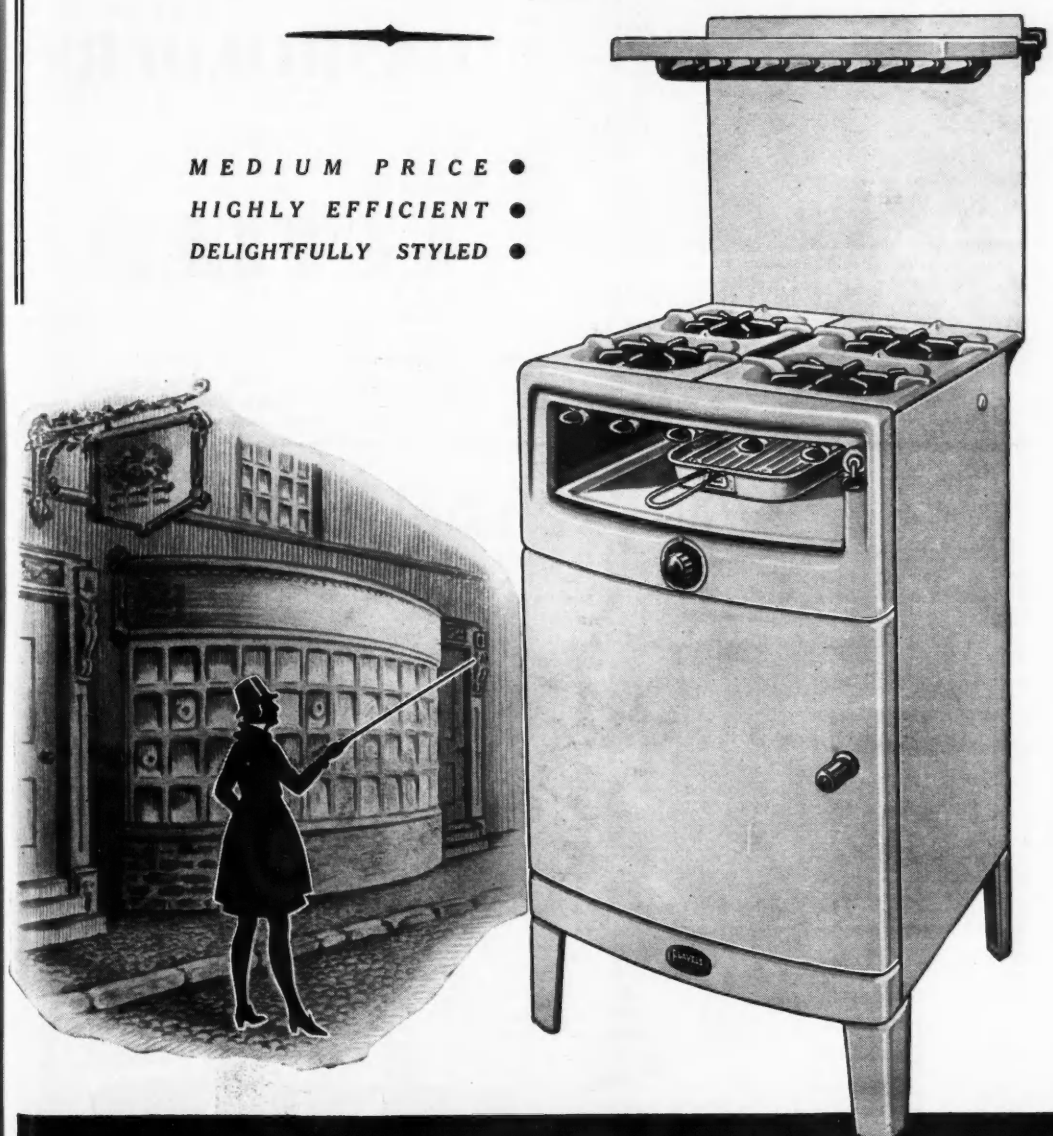

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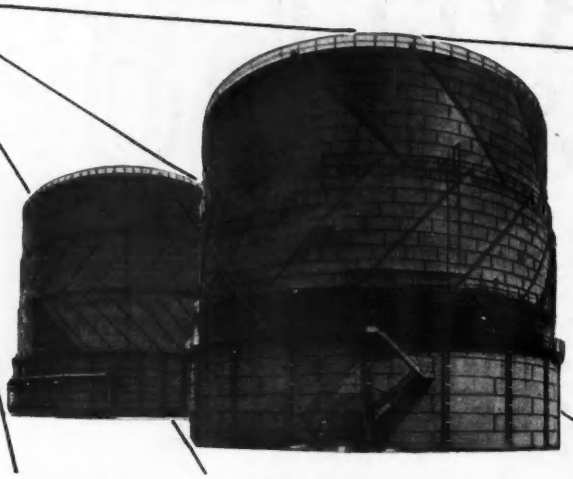

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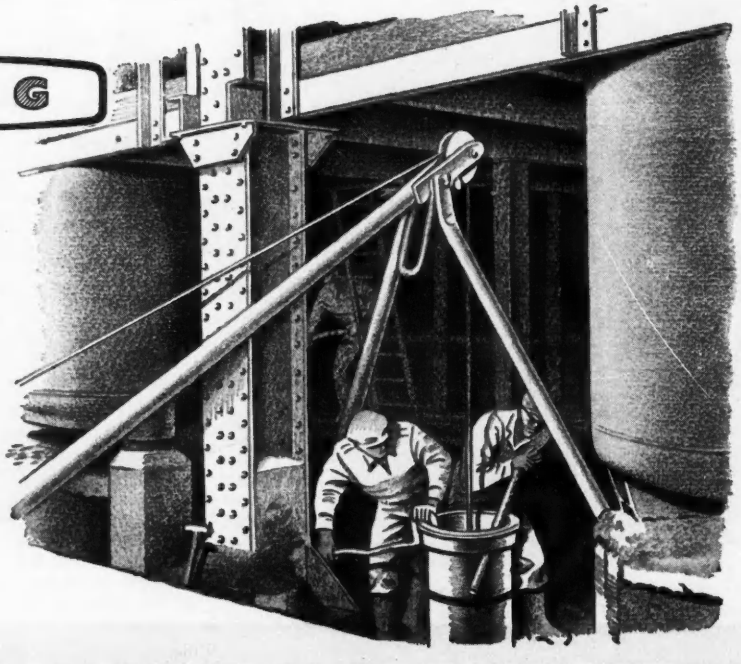

BY THE CEMENTATION Company Limited

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almost unknown, except in the production of blast furnace gas, and it does not appear to have any immediate possibilities in the British carbonising industries. Slagging ash producers have been used on the Continent, particularly for the gasification of low-grade fuels. The addition of fluxes such as limestone is necessary and wear and tear is unavoidably high. It is undoubtedly true, however, that the limit to the output of producers at the present time is set, in part, by the clinker difficulties which arise at high output. Very few undertakings gasify low-swelling coals in mechanical producers in the carbonising industries, but in certain circumstances this practice may be attractive and Hawthorne[3] has described one such installation. The conversion of mechanical producers from coke to coal gasification introduces no particular difficulties in respect of ash removed.

Water Gas Plant

Blue water gas and carburetted water gas plants of capacity greater than 1 mill. cu.ft. per day are usually provided with self-clinkering generators and annular boilers; a survey of current design has been given by Cheetham.[4] The output of a given plant is regulated by the amount of air passed through the generator during the blow, and there has been a continual tendency to increase the blast rates. This has been favoured by the development of plants with dry-sealed self-clinkering grates. Plants of this type exist in this country, but they are not common although they are far more widely used in the United States. Dry-sealed plants with high blast rates and outputs are more susceptible to clinker difficulties than the more orthodox types, but these difficulties can be overcome by careful control of the air/steam ratio. The automatic operation of water gas sets has done much to reduce clinker and ashing difficulties, since the temperature fluctuations in the generator fuel bed have been reduced by the short cycle which is allowable with automatic operation. It can be said that the degree of control possible with full instrumentation and mechanistaion of water gas plants has eliminated the clinker difficulties which were so common with hand-operated sets. The intelligent use of grate annulus and back-run gas temperature recorders gives complete control of fuel-bed conditions, and the eccentric grate and crushing rings will take care of clinker and ash extraction most satisfactorily.

The Liverpool gas undertaking makes very free use of water gas for town gas use, and it is significant that over a period of 10 years of high load factor on these plants no breakdown caused by clinker difficulties has been experienced. These plants all employ wet-sealed generators.

Conclusion

This discussion of ash and clinker on producer plants in the gas industry has deliberately avoided the consideration of the composition of the ash itself, which has been adequately dealt with in other papers. Mention should, however, be made of the recovery of germanium from the flue dusts in producer-gas-fired installations, which may contain up to 1.5% GeO_2 when the coke is derived from Durham coals. Such flue dusts have been processed on a large scale for the recovery of germanium.

The employment of mechanical producers on an increasing scale has been due to a number of reasons, but improvement in respect of the combustible matter in the refuse has often a considerable influence. Clinker difficulties are probably the greatest factor preventing rapid developments in gas producer practice, particularly when low-grade fuels are to be gasified.

REFERENCES

1. WALKER, R. 'Notes on the Application of Mechanical Producers to Retort House Practice.' *Gas*, 1948, 24, 529.
2. HUBBARD, W. S. Recent Producer Gas Practice in the Liverpool Undertaking. Instn. Gas Engrs. Publ. 367/170 (1950).
3. HAWTHORNE, S. K. Discussion on paper by W. S. Hubbard (Ref. 3).
4. CHEETHAM, H. S. Manufacture and Application of Water Gas in Town Gas Production. *Gas Journal*, 1949, 258, 448.

COMPANY NEWS

RAWLPLUG

The Directors of the Rawlplug Company, Ltd., have resolved that an interim dividend of 10% actual, less tax, be paid on the ordinary shares for the year ending December 31, 1952.

WILLIAM SUGG

Current assets £310,598 (£304,900), including stock £150,407 (£120,552) and cash £11,551 (£19,690). Current liabilities £94,316 (£81,267), including creditors and accrued charges £54,984 (£45,208). So far as the current year is concerned, states Mr. P. H. Sugg, Chairman, 'we have a well-filled order book and are particularly active in connection with the rearmament programme.' Since June 30 the remainder of the shares of Cowper Penfold and Co. have been acquired and the concern is now a wholly owned subsidiary.

STAVELEY

The preliminary statement of Staveley Coal and Iron Company shows a group profit of £1,141,077 for the year ended June 30, 1952, compared with £822,479 for the previous year, an increase of £318,598. After taxation of £740,954, against £433,214, the net profit attributable to the holding company rose from £389,265 to £400,123. A final dividend of 14%, less tax, is recommended, making 22½%, less tax, on the £3,385,356 one class capital. This compares with a total of 12%, tax free, for 1950-51, comprising interim 4½% and final 7½%.

DANISH GAS

Dividend, 8% year to June 30 (same), gross profit £810,248 (£655,245), and net profit £310,248 (£255,245), after special provision for depreciation £500,000 (£400,000 provision for renewals).

VICTORIA GAS & FUEL

The Gas and Fuel Corporation of Victoria shows a profit to June 30 of £179,666, less debit brought in £17,741. Preference dividends £88,674, preliminary expenses written down £3,000, leaving credit balance £70,251, subject to preference dividend for half-year to June 30.

THOS. W. WARD

Thos. W. Ward, Ltd., recommend a final ordinary dividend of 10%, plus a bonus of 5% making with the interim paid in March a total of 20%, less tax, for the year ended June 30, 1952. This is the same rate as for the previous year, when a dividend of 5% was deferred until January, 1952. Group net profit for the year rose from £794,084 to £805,471. This was struck after taxation of £1,076,564 (£1,092,866) and after crediting exceptional income of £35,167 (£33,385). The parent's net profit was £574,955, against £550,188 for 1950-51. The Directors state that the previous year's figures do not include a capital profit of £506,567 which was transferred to capital reserves. In addition, the figures for 1951 have been amended to include the results of two subsidiary companies not formerly consolidated.

BABCOCK & WILCOX

Babcock and Wilcox Ltd., are maintaining the interim dividend at 7½%, less tax, on the £5,016,265 ordinary capital in respect of 1952. For the previous year a final dividend of 7½% and bonus 3% made a total of 18%.

OXLEY ENGINEERING

In addition to raising the dividend from 12½% to 15%, the directors of Oxley Engineering Co., Ltd., recommend a bonus of 2½% (nil), making 17½%, less tax, on the £250,000 one-class capital for the year to June 30 last. Net profit of the parent company, after taxation of £51,176 (£39,031) is £41,181, compared with £29,617. General reserve receives £20,000 (nil), and the carry-forward is £52,774 (£53,624). Net profit of the group after taxation of £70,246 (£67,580) is £58,116 (£44,876), and the carry-forward £133,095 (£116,320).

GAS SUPPLY

The Directors of the Gas Supply Company, Ltd., Melbourne, in their 26th annual report for the year ended June 30, 1952, record a profit of £35,238, which with the amount brought forward from the preceding year makes a total of £39,105. After payment of the interim dividend there is a balance of £23,505, which the Directors recommend be appropriated as follows: Final dividend on ordinary stock units at the rate of 3½%, making 6½% for the year (£18,200); carry forward £5,305.

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METAL-TO-METAL JOINTING MATERIAL

Ever since 1913 "PERMAC," the original Metal-to-Metal jointing, has been holding up difficult joints in Gas Works and on Coke Oven Plants all over the world. Equally suitable for any joint—steam, water, gas, oil, benzol, ammonia, etc.—screw pipe or flange.

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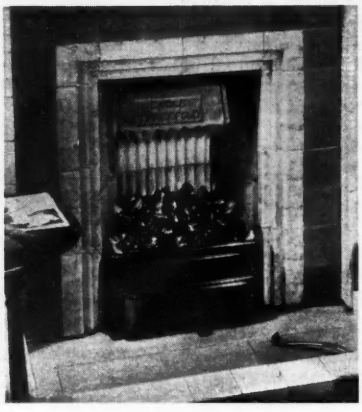
TRADE NEWS

Radiation Ltd.

A NEW inset fire for economical continuous burning on any type of domestic solid fuel, the 'Loray' fits a standard 16 in. fireplace opening, but the bottom grate design is quickly adaptable to variations in width of fireback and depth of opening.

The lever on the ashpit cover accurately controls the flow of air to the bottom of the fuel bed to give a cheerful blaze, a quiet friendly glow, or a complete airtight fit for overnight burning.

The fire can be supplied with an extension plate, which is necessary for



The new Loray fire.

overnight burning where a back boiler is installed. This ensures continuous burning for a minimum of 10 hours and, by day, a single movement converts the plate into a useful trivet.

Economical in use, the fire will keep a room of up to 1,500 cu.ft. comfortably warm day and night, in the depths of winter, on as little as 1 to 1½ cwt. of fuel a week. For trouble-free lighting if overnight burning is not required, the 'Loray' can be supplied with built-in gas ignition.

Available in attractive 'Lexos' porcelain enamel finish in black, brick, or fawn mottle, copper or fawn lustre.—*Radiation Group Sales Ltd., Solid Fuel Division, Wilsons and Mathiesons, Ltd., Leeds, 12.*

'Best Wortley'

WE have received from the Leeds Fireclay Co., Ltd., a copy of an illustrated booklet giving full particulars of the refractory materials which the firm manufactures. The company has a long and wide experience of the application and use of refractories in many different industries and has an excellent record of service in the carbonising industry. In this field 'Best Wortley' refractories have been and continue to be used in the construction and maintenance of many of the largest gas-making and coking plants in the United Kingdom. As the foreword to the booklet points out, execution of such contracts calls for careful planning and progressing of deliveries of material, and the firm's experience in this field has enabled the building-up of a valuable service organisation. The publication will be of much interest and help to the users of refractory materials.

Full particulars are given of standard, semi-silica, and aluminous quality materials, refractory concrete and refractory cement, and jointing and patching materials.

A special section of this well produced and illustrated booklet deals with special shapes, emphasis being laid on the fact that the use of standard shapes is preferable wherever possible. Special shapes call for expensive moulds and in general are more difficult to manufacture. Sometimes, however, their use cannot be avoided, and in such cases the firm suggests that there should be prior consultation regarding design so that manufacturing difficulties can be eliminated or reduced.

Illustrations and details are given of most of the standard shapes, together with examples of special shapes, and a section of the booklet is devoted to illustrations of plant which are typical of the many and varied contracts where 'Best Wortley' refractories are used. Included in the publication are tables of metric system conversions and the softening points of seger cones, and there is a useful equilibrium diagram of the alumina-silicate system.—*Leeds Fireclay Co., Ltd., Wortley, Leeds, 12.*

Birlec Ltd.

BUILDING work has now begun on a site adjoining the Birlec main offices and works at Tyburn Road, Erdington, Birmingham. These extensions will provide additional drawing office capacity and other facilities, while similar work at the other end of the factory will lengthen the existing works bays. These developments will enable the company to provide even better service to its many customers and also help it to keep pace with its increasing volume of business.

This constructional work is part of a larger project, the complete realisation of which is, however, delayed by current building restrictions.

Trade Publications

THE HARVEY MAGAZINE.—House magazine of G. A. Harvey & Co. (London), Ltd., containing news of the company's sporting and social activities.

RENOLD FLEXIBLE COUPLINGS. — A leaflet describing the spider type couplings manufactured by the Renold and Coventry Chain Co., Ltd., Manchester, and designed for low h.p. drives at relatively high speeds.

THE HURSEAL TIMES.—A broadsheet published in the interests of better heating by Hurseal, Ltd., of 229, Regent Street, W.1. Examples of Hurseal equipment are illustrated and an offer is made to dress retailers' windows with the firm's products free of charge.

WAKEFIELD INDUSTRIAL LUBRICATION SERVICE.—A brochure issued by C. C. Wakefield & Co., Ltd., of 45, Grosvenor Street, W.1, showing how the firm's industrial lubrication service is able to assist the user of industrial lubricants to attain an efficient standard of lubrication and so safeguard expensive plant.

HEAVY FAN ENGINEERING.—A catalogue by Keith Blackman, Ltd., of Tottenham, N.17, illustrating the firm's larger types of Tornado fan engineering equipment. An interesting and useful feature is the use of a small symbol alongside the illustration to enable the approximate size of the installation to be estimated at a glance.

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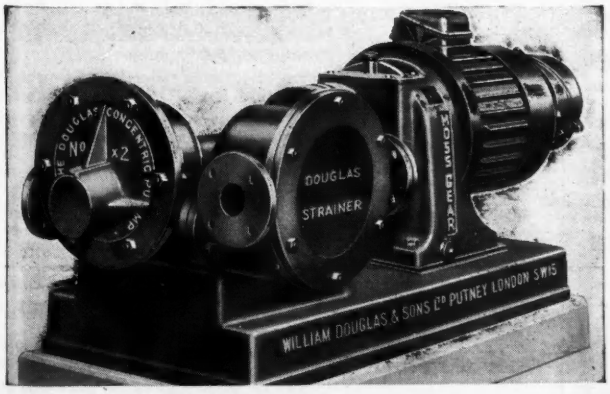

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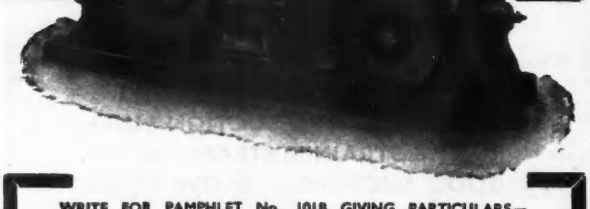
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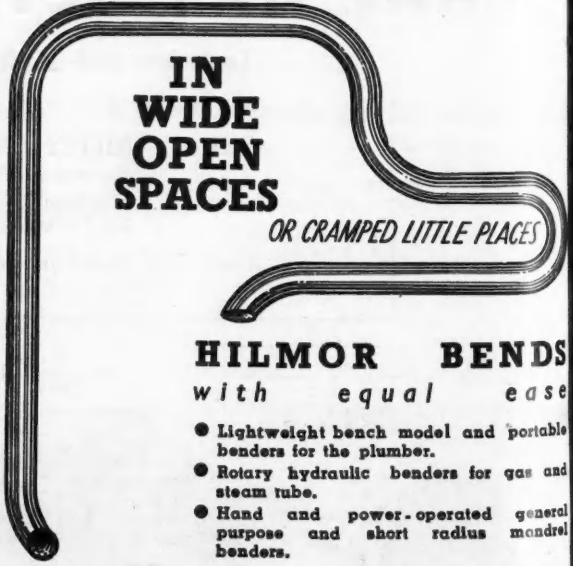
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PUBLISHERS' NOTICE

The "Gas Journal" is published every Wednesday, price 1/3d.; by post 1/5d.

Subscription Rates: Home and Empire :- 52/- per annum; Foreign :- 60/- per annum. (Both payable in advance.) A copy of the "Gas Journal" Calendar & Directory is presented each year to continuous subscribers.

Classified Advertisements: All small classified advertisements are charged at 1/9 per line (approx. 7 words) - minimum charge 10/6. A Box Number address occupies 2 lines, and a further 6d. is charged towards cost of postage on replies. Copy must be received by first post on Monday to ensure insertion in that week's Journal.

Displayed Advertisements: Rates obtainable on application to the Business Manager. Change of copy for displayed spaces must be received 14 days prior to publication if proofs are required. Type area of inside pages 10" deep x 7" wide; block screen 120.

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APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

EASTERN GAS BOARD

IPSWICH DIVISION

CHIEF CHEMIST—

IPSWICH UNDERTAKING

APPLICATIONS are invited for the position of CHIEF CHEMIST at Ipswich at a salary within the range £645-£745 (Grade A.P.T. X).

Candidates should hold a suitable qualification in chemistry and should be thoroughly experienced in modern laboratory practice.

Applications giving the names of two referees should be addressed to the undersigned by November 10, 1952

W. J. COLLINS GARRARD,
Divisional General Manager

Crane Hill Lodge,
London Road,
Ipswich.
October 21, 1952.

SCOTTISH GAS BOARD

GREENOCK GROUP

IRVINE DISTRICT

TECHNICAL ASSISTANT

APPLICATIONS are invited for the position of TECHNICAL ASSISTANT to the above district. The salary will be Grade A.P.T. V, Provincial 'B,' *i.e.*, £430/£510 per annum, with placing according to qualifications and experience.

Candidates should have experience of Vertical Retorts and ability to handle men will be an advantage.

The successful candidate may be required to pass a medical examination and to join such contributory superannuation scheme as the Board may adopt.

Applications endorsed 'Technical Assistant,' and giving full details of age, qualifications, etc., should reach the undersigned by Friday, November 14, 1952.

DAVID GARDNER,
District Engineer & Manager.

(Classified advertisements continued on Supplement 4)

APPOINTMENTS VACANT (ctd.)

FIRST-CLASS GASHOLDER ERECTION FOREMEN required for Contracts of all sizes. Applications stating age, experience and salary required, to Robt. Dempster & Sons, Ltd., Elland, Yorks.

WALES GAS BOARD

RHYMNEY AND ABER UNDERTAKING

TECHNICAL ASSISTANT—DISTRIBUTION

APPLICATIONS are invited for the the position of TECHNICAL ASSISTANT at a salary within Grade A.P.T. V (£445-£525).

Candidates should have had experience of high and low pressure distribution systems and will be required to assist the Distribution Engineer in all aspects of distribution work. The possession of the Institution of Gas Engineers Higher Certificate in Supply, or an equivalent qualification, would be an advantage.

The successful applicant will be required to pass a medical examination and subscribe to such superannuation scheme as the Board may adopt. Applications, giving details of experience and qualifications, together with the names of two referees, should be addressed to the undersigned within fourteen days of the publication of this advertisement.

D. I. ROWLANDS,
General Manager.

Wales Gas Board,
Rhymney & Aber Undertaking,
St. Martin's Road,
Caerphilly, Glam.

WALES GAS BOARD

ABERYSTWYTH UNDERTAKING—

ASSISTANT ENGINEER AND MANAGER

APPLICATIONS are invited for the position of ASSISTANT ENGINEER AND MANAGER of the above Undertaking. Applicants should be conversant with the operation, maintenance and repair of all normal gasworks' plant, and should be capable of carrying out and applying the usual routine tests to the control of gas manufacturing and purification processes. Experience in control and operation of continuous vertical retorts is an essential qualification and knowledge of horizontal retort practice will be an advantage.

Applicants should hold the Higher Grade Certificate (Manufacture) of the Institution of Gas Engineers or its equivalent and knowledge of distribution practice will be taken into account when making the appointment.

The duties will include technical control of the carbonising and ancillary plant at Aberystwyth as well as advisory work in respect of both manufacture and distribution at four other Undertakings in the Cardigan Bay Group.

The salary will be in accordance with Grade A.P.T. VIIIb (£550/630 per annum) and a house will be available at a reasonable rental.

The successful candidate will be required to undergo medical examination and will be subject to the provisions of any superannuation scheme which the Board may introduce.

Applications, stating age, training, qualifications and experience, should reach the Engineer & Manager, Wales Gas Board, Aberystwyth Undertaking, Park Avenue, Aberystwyth, Cards., not later than Saturday November 15, 1952.

WALES GAS BOARD

ASSISTANT ENGINEER—

LLANDUDNO UNDERTAKING

APPLICATIONS are invited for the above appointment.

Applicants should preferably possess the Higher Grade Certificate (Manufacture) of the Institution of Gas Engineers or its equivalent. They must have a thorough experience of the technical control and operation of Horizontal Retort Settings with D.B. Conveyor Coke Handling System, Blue Water Gas Plants, Producer Gas Plant, and the usual ancillaries, including Benzole Extraction Plant.

The commencing salary will be dependent upon the qualifications and experience of the successful applicant and will be within Grade A.P.T. IXA (£595-£695 per annum).

The successful applicant will be required to pass a medical examination, and to subscribe to such superannuation scheme as the Board may adopt.

Application, stating age, training, qualifications and experience, and giving the names of two referees, should be addressed to the undersigned, to be received by November 24, 1952.

C. B. MAWER,
Secretary.

1 & 2, Windsor Place,
Cardiff.

NORTH WESTERN GAS BOARD

OLDHAM-ROCHDALE GROUP

CHIEF CHEMIST—ROCHDALE WORKS

APPLICATIONS are invited for the above pensionable appointment at a salary within Grade A.P.T. X (£645-£745 per annum).

Applicants must possess suitable technical qualifications and have had sound training and experience in the chemical control of a large Gas Works.

Detailed applications, giving the names of two referees, should reach the General Manager, North Western Gas Board (Oldham-Rochdale Group), Gas Offices, Dane Street, Rochdale, within fourteen days.

NORTH WESTERN GAS BOARD

MANCHESTER GROUP

SHIFT ENGINEER—

PARTINGTON WORKS, MANCHESTER

APPLICATIONS are invited for the above pensionable appointment at a salary within Grade X (£645-£745 per annum).

Applicants should have practical knowledge of the operation and maintenance of Horizontal and Vertical Retorts, C.W.G. plants, and be capable of supervising general Gas Works plant operation.

Detailed applications, giving the names of two referees, should reach the General Manager, North Western Gas Board (Manchester Group), Town Hall, Manchester 2, within twelve days.

SOUTH EASTERN GAS BOARD

ASSISTANT STATION ENGINEER—

ROTHERHITHE

THE WORKS have been recently reconstructed with a capacity of 9 million cubic feet per day manufacture in horizontal retorts. The jetty at this Station forms an important reception point for seaborne coal.

Applicants should be qualified Gas Engineers with experience in the operation and maintenance of Gas Works plant.

Salary within the range £750-£875 per annum.

Applications, giving full particulars of training, qualifications and experience and quoting reference V10/277 should be sent to the Personnel Manager, South Eastern Gas Board, Katharine Street, Croydon, to be received not later than fourteen days after the publication of this notice.

WEST MIDLANDS GAS BOARD

WARWICKSHIRE DIVISION

UNIT CARBONISING ENGINEERS—

COVENTRY DISTRICT

APPLICATIONS are invited for three positions as UNIT CARBONISING ENGINEERS at Foleshill Works, Coventry District.

The duties will entail the supervision of Coal Gas Production at present producing up to 13½ million cubic feet per day and expanding to 25 million cubic feet per day in the future. Experience on modern C.W.G. plants and ancillary plants generally will also be required.

Candidates must hold, as a minimum qualification, the Higher Grade Certificate of the Institution of Gas Engineers.

The salary for each post will be within Grade X (£645 to £745 per annum) of the National Salary Scales for Gas Staffs.

The posts are superannuable and the successful candidates may be required to pass a medical examination.

Applications, stating age, qualifications, experience and the names of two referees, should be addressed to Mr. A. Allen, Divisional General Manager, West Midlands Gas Board, Warwickshire Division, Gas Street, Coventry, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

CONTRACTS OPEN

CITY OF PORT ELIZABETH

GAS DEPARTMENT

CONTRACT NO. 24

CARBONISING PLANT—

INTERMITTENT VERTICAL RETORTS

NOTICE is hereby given that the date for the receipt of tenders in connection with the above is extended until Thursday, January 8, 1953, and tenders must be received by the Town Clerk not later than 12.45 o'clock p.m. on that day.

MISCELLANEOUS

WATER-CONTENT TEST — 3 MINUTES — Already in use in the gas industry, "SPEEDY" MOISTURE TESTER gives accurate results with coal, coke and ash, and many chemicals. Needs no electricity; no skill. Portable. Write for illustrated brochure or order direct £24 10s. 0d. complete.—Thos. Ashworth & Co., Ltd., (Dept. G.J.), Basket Street, Burnley, Lancs.

PLANT FOR SALE & WANTED

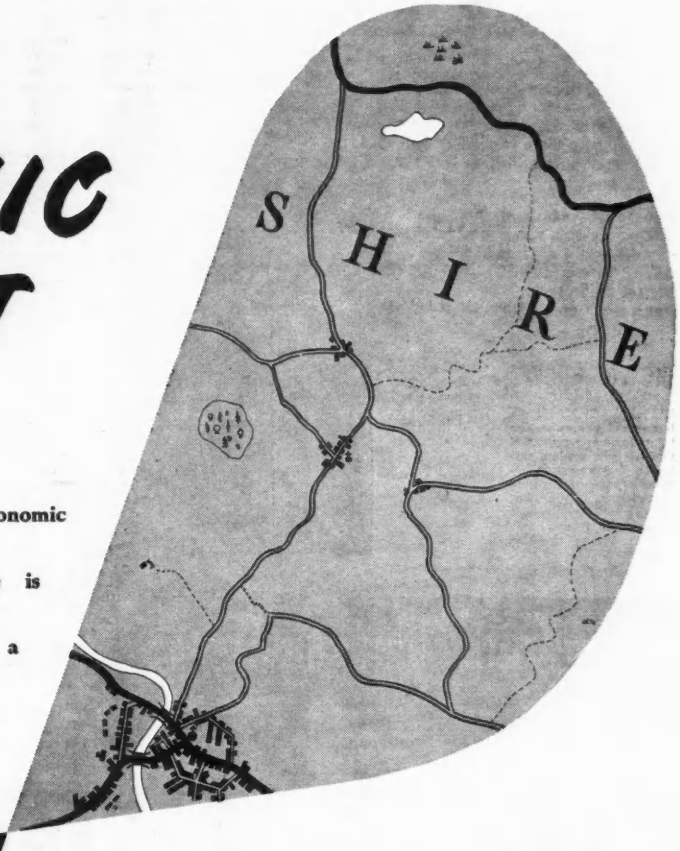
READY FOR IMMEDIATE DELIVERY—NEW CORNISH BOILER 20 ft. 0 in. × 6 ft. 0 in. × 150 lb. w.p., NEW CORNISH BOILER 24 ft. 0 in. × 6 ft. 0 in. × 150 lb. w.p., NEW LANCASHIRE BOILER 24 ft. 0 in. × 6 ft. 0 in. × 160 lbs. w.p.—Clayton, Son & Co., Ltd., Moor End Works, Hunslet, Leeds, 10.

WANTED :—REGULAR SCRAP GAS METERS AND PARTS. Best prices paid. Offers to :—Mitcham Smelters Ltd., Red House Road, Croydon, Surrey. *Tel.*: THOrnton Heath 6101 (Private Branch Exchange).

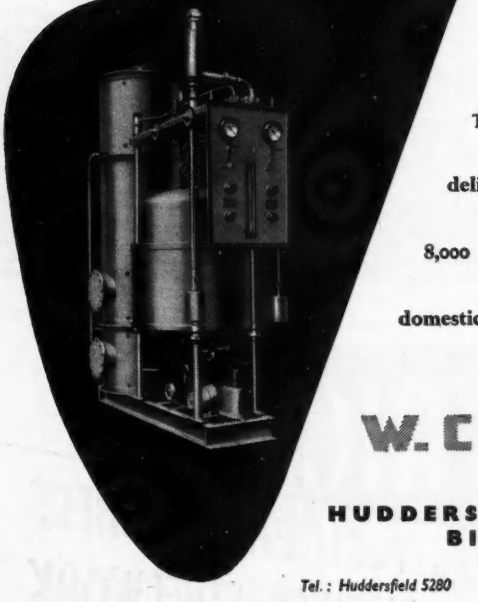
STRINGER BROTHERS
ALBION WEST BROMWICH

S.B
IRON & STEEL
PLATES &
SHEETS
BARS & SECTIONS
Telephone:
WEST BROMWICH 0436-7

THE ECONOMIC UNIT



The conception of the minimum economic unit of gas manufacture is wider when the source of supply is a Holmes-Mallet Butane air plant.



THE ECONOMIC UNIT

The Holmes-Mallet Butane Air Plant illustrated delivers a butane air mixture up to 8,000 cubic feet per hour which can be used for all domestic and industrial purposes.

W. C. HOLMES & CO. LTD.

HUDDERSFIELD · LONDON
BIRMINGHAM

Tel.: Huddersfield 5280 London: Victoria 9971 Birmingham: Midland 6830

FOUNDED 1850 HOLMES HUDDERSFIELD

1811

industrial gas compressors

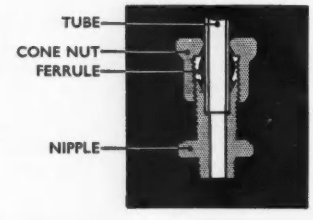
FOR COMPRESSING AIR OR GAS SUPPLIES USED FOR FURNACE HEATING, METAL MELTING, BRAZING, SOLDERING BITS, LAUNDRY IRONS, ETC.

DIRECT COUPLED COMPRESSORS (see illustration right) are fitted with automatic internal by-pass valves and lubrication systems. They are direct coupled to Keith Blackman motors. Type OA compressors in this range occupy a floor space of only 18" x 7½".
CAPACITY RANGE: 100 to 750 cub. ft. of gas or air per hour at 3 lbs. per sq. in. pressure.

TYPE 4 COMPRESSORS (not illustrated) are also fitted with automatic internal by-pass valves and lubricators. The complete unit includes motor and drive on a common bedplate, all of Keith Blackman manufacture.
CAPACITY RANGE: 500 to 20,000 cub. ft. of gas or air per hour at 3-5 lbs. per sq. in. pressure.
AREA OCCUPIED: from 9¼" x 16½" to 61" x 27".

DID YOU KNOW?

KEITH BLACKMAN have been making compression joints for many years and the present design embodies features developed as a result of this long experience. Notice that the shape of the ferrule is such that the joint is made without unduly stressing the tube.



serving to burn

Note: the four burner heads (right) are for high pressure gas, or low pressure gas and air blast.

LEFT: "Fishtail" type burner with two-armed stamped pattern injector for heating liquid in tanks by submerged combustion tubes. For use with low pressure gas supplies.
Size Range: 1", 1¼", 1½", 2" and 2½" outlets.
Capacity Range: 45-280 cub. ft. of gas per hour.

Brass non-blow-off head types: deal with 5 to 10 cub. ft. of gas per hour.

Stainless steel, "F" type head, burner: deals with 8 cub. ft. of gas per hour.

Perforated head type burner: deals with 10 to 15 cub. ft. of gas per hour.

INDUSTRIAL GAS EQUIPMENT

Keith Blackman LIMITED
MILL MEAD ROAD, TOTTENHAM, LONDON, N.17
'Phone: Tottenham 4522 (twelve lines) 'Grams: "Keithblac, Norphone, London."
BRANCH OFFICES AT MANCHESTER, BIRMINGHAM, LEEDS, GLASGOW, NEWCASTLE-ON-TYNE, PENARTH near CARDIFF, AND BELFAST

524/1/GJ

GAS RETORTS

HARRIS & PEARSON LTD

STOURBRIDGE, ENGLAND

INSULATING BRICKS, RECUPERATOR TUBES, SPECIAL SEMI-SILICA QUALITY FOR SEGMENTAL RETORTS WITH NO EXPANSION OR CONTRACTION AT 1400° C

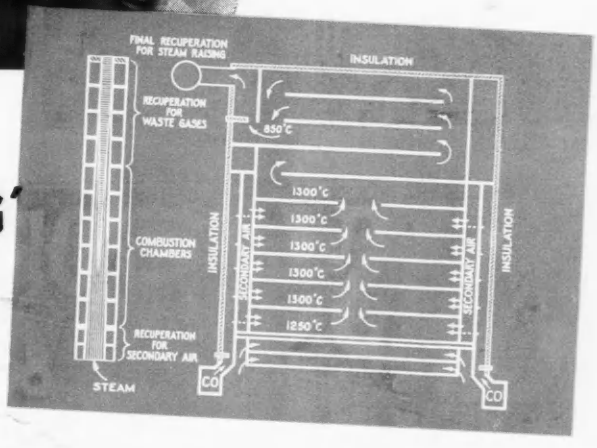
Manufacturers of
Fire Bricks, Lumps & Tiles
OF EVERY DESCRIPTION

WESTWOOD & WRIGHTS LIMITED

BRIERLEY HILL, STAFFS.

GASHOLDERS · PURIFIERS · WASHERS
CONDENSERS · CASTINGS · STEELWORK
GAS VALVES · WELDED PIPES

Printed by STRAKER BROTHERS LTD., E.C.2, for WALTER KING, LIMITED, 11, BOLT COURT, FLEET STREET, LONDON, E.C.4. Wednesday, November 5, 1952



'BALANCED HEATING' saves fuel

"Balanced Heating", a feature of the Glover-West continuous vertical system of carbonization, reduces fuel consumption to a level hitherto unobtainable. In the "Balanced Heated" setting, producer gas enters the combustion chambers from *both* sides and retorts are evenly heated by *primary* combustion. Combustion proceeds towards the centre of the setting, heat transmitted to the outer walls being recovered in the producer gas and air uptakes and returned to the system. Control of temperature in individual combustion chambers gives greater flexibility—an important factor today when many different coals are handled by one plant.

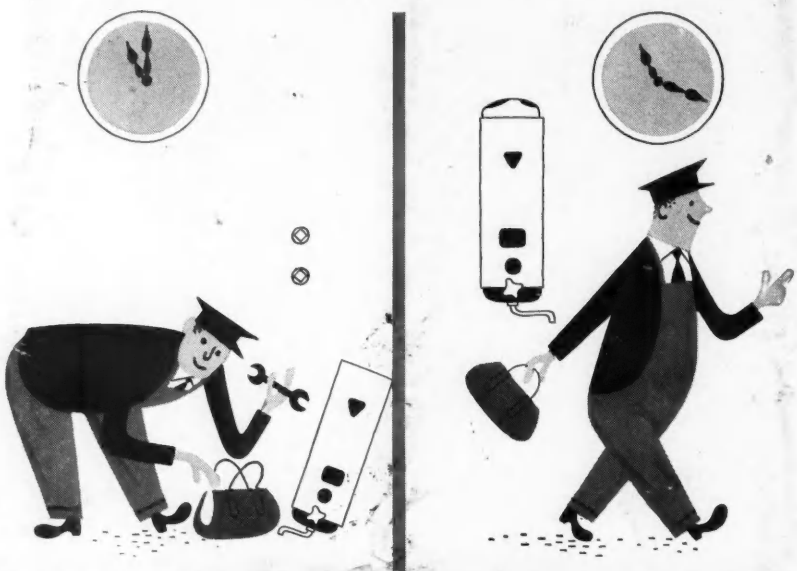
★*Illustration shows a "Balanced Heated" setting under construction*

West's Gas IMPROVEMENT CO. LTD.

ALBION IRONWORKS · MILES PLATTING · MANCHESTER 10

Telephone: COLlyhurst 2961. Telegrams: Stoker, Manchester.

London Office: Columbia House, Aldwych, W.C.2. Phone: HOLborn 4108-9 Grams: Wesgasco, Estrand



NEW AID FOR GAS SALESMEN

The Ascot jigged wall fitting cuts the cost of installing sink gas water heaters to a few shillings per house or flat. Its reception has been tremendous. The wall fitting is chased in *during the erection of houses or flats*. Only neat plugged ends are left exposed. Cost is negligible. A tenant can then arrange at any time for an Ascot sink heater to be fitted, a job which takes only about 20 minutes and leaves the surface decoration undisturbed.

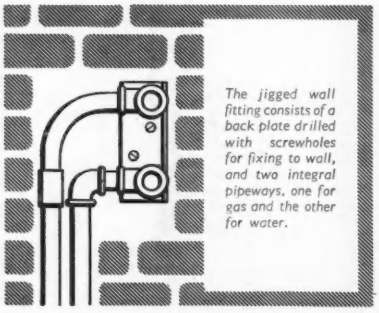
The help it gives *you*, the gas salesman, is obvious. The jigged wall fitting is in fact an advance salesman of unsurpassable reliability!

20,000 Ascot Jigged Wall Fittings cheapen installation

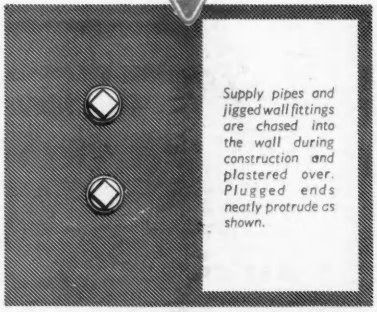
44 housing authorities have already adopted the jigged wall fitting. Over 20,000 have been installed. Housing authorities have adopted it because it provides at extremely low cost the means of obtaining an alternative hot water supply for the kitchen. *Tenants particularly appreciate this convenient service — which supplements the solid fuel heating system, especially in the summer, and at the same time saves money and fuel.*

The jigged wall plate takes the Ascot 503 range of heaters and the Ascot RS52/1 boiling water heater.

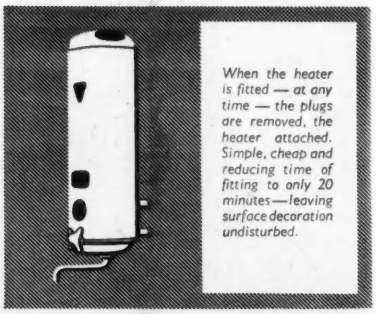
ASCOT



The jigged wall fitting consists of a back plate drilled with screwholes for fixing to wall, and two integral pipeways, one for gas and the other for water.



Supply pipes and jigged wall fittings are chased into the wall during construction and plastered over. Plugged ends neatly protrude as shown.



When the heater is fitted — at any time — the plugs are removed, the heater attached. Simple, cheap and reducing time of fitting to only 20 minutes — leaving surface decoration undisturbed.

ASCOT GAS WATER HEATERS LIMITED • 43 PARK STREET • LONDON • W1